Return
Personal
Copy
Stan Davis
IN-SERVICE

NATIONAL FOREST RECREATION SURVEY

A REPORT ON THE RECREATION RESOURCES AND OPPORTUNITIES ON THE NATIONAL FORESTS OF THE CALIFORNIA REGION

SD
427
.R3
U62
1960

CALIFORNIA REGION

U. S. FOREST SERVICE

Property of
National FS Library
USDA Forest Service
240 W Prospect Rd
Fort Collins CO 80526

Forest Service San Francisco 11, California

NATIONAL FOREST RECREATION SURVEY REPORT

ERRATA -

Page 84 - 6th paragraph. 2nd sentence.

Between the words "Acres" and "wide" insert the words "per hunter day for the National Forests as a whole. The deer kill state".

Done. W.D

CONTENTS PAGE

Introduction - Purpose of Study	1
Past Studies	7
The California Public Outdoor Recreation Plan	9
Outdoor Recreation on the National Forests	23
Developed Sites	23
Dispersed Areas	30
Cooperation	37
The California Water Plan	38
Recreation Development by Cities and Counties	43
California Division of Beaches and Parks	45
Trends in Recreation Use	46
The Recreation Inventory	54
Procedure	56
Quality Guidelines	59
Collaboration	61
Future Recreation Demand	63
Conversion of Demand to Area Requirements	67
Visit to Visitor Day Ratios	69
Converting Factors	86
Supply and Demand Relationships	87
Balancing Surplus and Deficits	94
Problems in Recreation on the National Forests	95
Policy Considerations-Recommended Revisions	100
Use of National Forest Land by Other Agencies	103
Additional Policies	104
Interpretive Services	107
Program Recommendations	110
Program Costs	111
Other Resource Considerations	114
Resrarch	115
Summary	118

NATIONAL FOREST RECREATION SURVEY

REGION 5 - CALIFORNIA - 1960

1. INTRODUCTION

A. Purpose and Scope

1. Purpose

The National Forests of California produce many other resources besides the opportunity for outdoor recreation in all its forms. Perhaps the most important function of the area embraced by the national forests is that of a watershed supplying life-giving water to the people, their agriculture, and their industries. Billions of dollars are being or will be spent in California to capture and distribute this water to the areas of need. One of the principal purposes of national forest management is to see to it that these watersheds produce the best quality of water with best regulated flow possible.

The forests too support a vast growing timber crop necessary to the industries and growth of the State and Nation's population and industries. Nationwide studies in the form of the recent "Timber Resources Review" direct attention to the need for keeping the Nation's timber lands productive if the country is going to have the wood and wood products it needs, now and in the future.

Thousands of ranches situated in the valleys and foothills depend upon the range lands and forage producing areas of the national forests for part of the ranch operations. Much of this forage producing land is intermingled with private land and must be used in conjunction with it. These forage producing lands are vital and form a significant part of the State's livestock economy.

The forests are the habitat of wildlife and fish. How they are managed has a great influence on the health, vigor and size of the wildlife crop. Literally millions of people get pleasure and health giving recreation from the use of this crop each year.

The National Forest lands of California, some 20 million acres of them, comprise one-fifth of the State's area. Because of this and the way the forests are situated, space itself becomes an important element in management; space to build highways and roads; space to construct power lines and pipe lines; space to live; space to use the resources of the forest.

The national forests were reserved by the United States over 50 years ago to provide for the management and use of all of their resources for all of the people "for the greatest good to the greatest number in the long run". Recreation is one of these resources.

"Multiple-Use" has evolved in the administration of the national forests and their resources as a concept of management to achieve the purposes of the national forests and obtain their greatest total benefit, tangible and intangible.

Multiple-use as a concept of management is an often used, often misused term. Often it is misunderstood. As a concept it does not lend itself to precise definition. Simply stated, multiple-use is a concept of management which involves a combination of uses or services of the land in such a way that the fullest realization of all of the values is obtained. This presupposes that the use and services will be managed in such a manner that they are complimentary, so far as this is attainable. When this is not attainable, uses must be adjusted to minimize conflict or exclude it if possible. If all values and services can be used to a maximum without conflicts, the ultimate is obtained. However, such full use is not usually attainable, particularly under intensive management with strong pressures of demand. In most cases a harmonious combination of uses to arrive at the maximum over-all service from the land requires some concessions in the individual uses.

In applying such a concept as this to land management, it is first necessary to define the objectives. If, as in many areas of private land, it is timber production as a primary objective, then other uses and services of the land become secondary to the degree they adversely effect the production of timber. If on the other hand the objective is total use, tangible and intangible, such as on the national forests, then other forms of adjustments have to be made depending on the land, its situation, and the services it can perform.

The multiple-use concept, particularly on lands where total use is the objective, is conceived to apply to large areas such as a watershed or similar extensive tract of land. It is true that almost every acre of forest land yields more than one one useful service. Lands managed for timber production also yield water as part of a watershed and wildlife. Only minor adjustments are needed in harvesting operations to obtain full values. Recreation is obtained from such lands too, in the form of fishing and hunting. These uses are compatible and the degree to which each value is recognized and adjustments made constitutes multiple-use management of such areas.

TABLE I

RECREATION VISITS TO THE NATIONAL FORESTS OF R-5

8 Visitor Use Classes

1941 - 2000

Year	Millions		Average Length of Stay
	Visits	Visitor Days	
1941	4.70	11.59	2.4
1942	2.60	7.87	3.0
1943	1.20	4.23	3.5
1944	2.00	8.30	4.1
1945	3.40	14.10	4.1
1946	3.40	13.95	3.3
1947	4.30	13.20	3.1
1948	4.20	11.95	2.8
1949	3.80	10.67	2.8
1950	3.70	10.13	2.75
1951	3.98	12.75	3.25
1952	4.73	12.73	2.75
1953	5.21	14.16	2.75
1954	6.81	16.53	2.50
1955	7.71	17.22	2.25
1956	8.68	17.93	2.00
1957	11.08	22.18	2.00
1958	12.29	23.11	2.00
1959	13.56	23.45	1.75
1966	20.00	40.25	2.01
1976	35.25	78.89	2.24
2000	93.08	207.965	2.24

TABLE II

TRENDS IN USE ON THE NATIONAL FORESTS R-5

VISITOR DAY USE AND AREA DEVELOPED FOR USE CLASSES

As recorded in annual reports

YEAR	Camp & Picnic		Organization		Hotel & Resort		Winter Sports		Total 8 Use Classes	
	Acres Developed	M. Visitor Day Use	Acres Developed	M.Visitor Day Use	Acres Developed	M.Visitor Day Use	Acres Developed	M.Visitor Day Use	Acres Developed	M.Visitor Day Use
1940	4,808	2,805	4,220		1,241	652	15,455/1	601	25,784	10,083
41		4,660		611		957		584		11,586
42		2,320		482		664		461		7,871
43		1,303		236		782		99		4,226
44		1,647		528		956		105		8,303
45		3,510		1,506		2,451		179		14,097
46	5,933	4,185	2,805	1,645	1,838	1,641	19,645/1	395	30,312	13,948
47		4,563		961		1,426		414		13,200
48		4,574		975		1,525		791		11,949
49		4,587		1,042		801		484		10,665
1950	6,421	4,641	2,266	989	815	480	9,127	406	18,700	10,132
51		4,584		1,156		566		498		12,752
52		5,322		1,247		607		685		12,726
53		5,976		1,325		723		684		14,155
54		6,975		1,262		809		955		16,527
1955	5,909	6,814	2,745	1,400	1,196	768	11,848	1,302	21,837	17,220
56		7,082		1,424		929		1,040		17,928
57		6,496		1,616		1,270		1,025		22,177
58		9,121		1,690		1,164		1,237		23,108
59	6,623	8,621	3,329	1,566	1,101	1,488	5,486/2	1,344	21,201	23,452
% increase since 1950	86			58		210		231		132
% increase since 1940	270			156		128		124		134
NFRS 1960	5,589		3,063		925		6,650		21,669	

Notes/1 - Private land was reported these years

/2 - Area reduced to that actually developed and used

In other areas the different uses of the land are not so compatible. More significant adjustments in use and land treatment are necessary. In highly attractive recreation areas, such as around lakes and along attractive streams and highways, recreation use and occupancy becomes a dominant value and other uses must yield to it. Major adjustment in land use must be made. Wilderness is another example of land use adjustment to achieve the greatest benefit in some areas.

The process of management is to integrate uses where they are compatible and to separate or adjust them when they are not compatible to the degree necessary to achieve full value. This calls for a high degree of management skill and intensive evaluation of present and future values and benefits.

An example of integration in a multiple-use area is where the lands are zoned for their dominant value. Timber production and recreation are found to be the key factors in management, other values being compatible to both. The areas where recreation is dominant are defined. The areas where timber production is dominant are defined. Between these is a buffer or intermediate zone where values are relatively equal. Management practices are then devised to achieve the greatest total long range benefit and are subsequently applied to the areas or zones.

Where recreation is the dominant value such as in occupancy sites and contiguous scenic and use areas, timber use is limited to the removal of trees only to the degree that they are hazards or that their removal will improve or protect the recreation value.

Where recreation is an important value, such as in buffer strips, highway scenic zones, and such areas, timber use is limited to the removal of trees to the extent it will not detract from the recreation value.

Where timber production is the dominant value, growing and harvesting the crop is limited or modified only to the degree necessary to insure that the watershed and wildlife values are maintained or improved. However, such lands still have recreational value such as for hiking, hunting or nature study and remain available for that purpose.

The process of zoning and evaluating lands for their dominant values is "land use planning". The process of defining management practices to achieve the objectives is called "multiple-use land management". Both require infinite study and skill.

The first step in land use planning and the application of multiple-use management is to make complete inventories and evaluations of the forest resources so that each may be placed in the proper perspective for the area involved.

The next step is to integrate the uses and define the objectives of management for each. The third is to prepare management and development plans for each resource.

Inventories of national forest resources and services have been made or are being made and are continually being refined. This includes recreation. However of all resources and services, recreation needs most to be related to the supply and demand factors since:

1) It directly affects so many people.

2) The demand is increasing at an unprecedented rate.

3) Dedication of land to recreation requires the greatest degree of adjustment of other uses to meet its needs.

A National Forest recreation survey was initiated as a cooperative study with the State of California in 1958 and was refined to conform to a set of servicewide standards after they were established in 1959. It had five primary objectives or purposes, as follows:

1) To provide data necessary to the refinement of multiple-use land management plans. In short to determine what is needed to meet long-range needs and where it is located.

2) To provide basic data for long term and short term national forest and ranger district recreation development and management plans.

3) To provide data for local, state and national use for purposes of determining the extent to which the national forests can meet the recreation needs of the future within the framework of multiple-use objectives.

4) To provide information needed to coordinate national forest recreation development with that of other agencies and governmental subdivisions.

5) To provide the basis for policies and programs in recreation development and management.

2. Scope

The survey as refined consists of four principal tasks:

1) A comprehensive study and determination of demand for the different kinds of outdoor recreation available on the national forests, rsnger district by ranger district, for target years 1976 and 2000.

2) A detailed conversion of demand in people to area in acres required to meet the demand for the various kinds of outdoor recreation.

3) A physical survey, ranger district by ranger district of the area and quality of land available to meet the demands for the various kinds of recreation use.

4) A comprehensive analysis, district by district, of the relationship of the supply of recreation resources and the demand estimated to the years 1976 and 2000. The determination of surpluses and deficits and the balancing thereof to the degree practicable.

In the California Region a physical inventory of recreation occupancy type sites and areas and to a certain extent dispersed type recreation areas was initiated in 1958. At that time estimates of future demand were not perfected and the relationship of demand in people to area required were not developed. The physical inventory was initiated prior to the development of demand factors, in order to provide data for a California State survey.

This inventory in the absence of national guidelines was devised to gather data in such a way as to be readily convertible to any required form. All government and private lands within the national forests were mapped, evaluated and tabulated on the basis of suitability and quality criteria established for the purpose. While some limitations were placed on the inventory by sub-regional management direction formulae, they had little effect on the completeness of the occupancy type site inventory. The initial phase was completed in 1959 and data was furnished to the local planning agencies in a form acceptable to them.

National standards for the National Forest Recreation Resources Review became available in 1959. These standards provided for a more inclusive study in a different form than was completed by that time. Several use classes were added such as boating, swimming, and waterfront sites. While these were inventoried in the initial (1958) phase they had not been segregated into classes. In addition an inventory of dispersed type recreation resources, such as areas for fishing, hunting, boating, and scenic zones was required.

Thus the resources review work for 1959 and 1960 required (1) further segregation of sites into the classes required and (2) an inventory of dispersed area resources.

Since the occupancy site inventory was completed prior to perfection of demand estimates and their conversion into acres, the inventory was not limited by or to demand estimates. As a result on many national forests, a great deal more land was inventoried than was necessary to meet demands as later determined. Since, for the most part, a complete inventory of dispersed type areas was required, demand estimates had little effect on the intensity of the inventory of those resources.

In the process of converting the area initially inventoried to the NFRS form, demand considerations were brought into play, district by district. In this process the district ranger reviewed each inventoried site or area in the light of district demands and reduced the sites and areas, where in his judgment necessary, selecting the best parts of each. At the same time he directed his attention to achieving a distribution of projected use over the district at levels in line with multiple-use management considerations and applied judgment as to the direction demand would take within the district. Selected areas were delineated on site maps and appropriate data recorded on site forms and tabulations. On each district the area eliminated from that surveyed in the 1958 inventory was recorded as either unavailable or not needed. This selection brought each district inventory for the NFRS within reasonable relationship with demand projections where large surpluses would otherwise have been indicated.

Site quality was established in accordance with 1958 inventory criteria into classes comparable to those established in the NFRS. A 5% to 10% sample of each forest and most districts using both criteria indicated the results were comparable when larger areas were reduced to sites. However, since the quality established for the larger areas tended to be average for the entire area, when the best parts were selected for the NFRS the selected sites tended to be graded somewhat lower than they might otherwise be. It was decided that this would have no significant effect on either the inventory results or the subsequent planning program.

Private lands were not included in the conversion of the 1958 inventory to the NFRS except where private land was needed in the development of national forest land. Rights-of-way types of land requirements were not considered in this unless they were immediate and directly contiguous to the site. However, private land

inventories are retained in the total inventory file and will be useful in planning.

The survey and inventory in this region included all national forest lands except those areas classified as natural areas or sanctuaries. These were considered non-recreational. All other lands, including experimental forests will provide some form of recreation opportunity and were inventoried for the kind of opportunity they could provide.

B. Relation to Other Recreation Surveys and Studies

1. Past Forest Service Recreation Studies

The first comprehensive attempt to make a recreation survey in the California Region was in 1936 and 1937. At that time a forest by forest recreation inventory was made under direction of the regional office as a regional project. Criteria and standards were drawn up and Junior Foresters were trained and assigned to forests to carry out the projects.

This was a comprehensive survey directed primarily at obtaining an occupancy site inventory. All lands were surveyed and mapped on the basis of slope. o-15% slope was recorded as campground type land and 15-45% slope as special-use type land. Within the framework of mapping by slope class, sites were selected by quality class, without limit, based purely on physical characteristics.

The inventory was recorded on site forms, maps and photographs and tabulated by districts and forests. This inventory was to form the basis for forest recreation plans. While other studies were carried on in conjunction with this survey, such as camper questionaires, etc., site selection for planning was based primarily on district ranger judgment. There was no adequate supporting data for demand and area requirements per thousand visitor days. The inventory and the plan were never adequately related to one another. As a consequence the 1937 inventory had little use after it was completed, or to put it better, it was not used appreciably after it was completed. It covered both government and private land.

Upon initiation of the 1958 inventory and the NFRS, the 1937 inventory was reviewed and was found to have some usefulness in delineating areas to be studied and areas to be visited. It had little usefulness beyond this although it was carefully done and was comprehensive.

Upon completion of the NFRS the 1937 data was again reviewed, the useful portions, photographs and such were retained and the bulk discarded since the current survey serves all the foreseeable useful purposes of that inventory. Summary portions are to be retained for their historical value.

In 1956 a regional report was prepared for the Operation Outdoors project which was in the nature of a development program for Region 5. The report consisted of a general sizeup of the present situation, a look ahead for the ten-year period 1958-1968, and a suggested 5-year program for development and management of recreation in the region.

The report was general in nature, pointing up present deficiencies and the need to catch up. The program included an estimate of costs to catch up in recreation development and administration and meet the needs of the burgeoning population by 1962.

In effect the Operation Outdoors study was that of an interim operational study based on short term obvious needs. It lacked the support of long term analysis of supply and demand and fully documented recreation plans. Since the pressure of immediate need was so great, perhaps this background was not needed for the interim project. It also lacked coordination with other outdoor recreation development agencies largely because the role of other agencies was not clearly defined or planned. A further deficiency in the Operation Outdoors study was in research.

In May 1960 a report from the region to the Chief was completed and transmitted. This report, using the preliminary data developed for the state study, was made in response to a recommendation of the 1957 GII of Crafts and McKennæ. It covered in some respects most of the subjects included in the NFRS report, some in more detail such as the work of the State Division of Beaches and Parks. Statistical data and projections contained in that report are refined in this NFRS.

The NFRS therefore is a much needed study to supply the direction and documentation needed for long and short term plans and coordination of development with other agencies, and to point up the areas where research is needed. In short, it provides the basis to revise and extend operation outdoors type programs within the framework of the multiple-use objectives of the Forest Service. Preliminary cost studies used in the Operation Outdoors program will need to be extended and refined to implement the recreation plans which will be developed from the NFRS.

2. Current Studies of Other Agencies

Currently outdoor recreation studies have been or are being made by a number of other agencies, notably the State and Counties.

In 1957 the State Legislature passed the California Outdoor Recreation Plan Act (S.B. 32). This provided for a commission, committees, advisory boards, and other provisions to expedite a statewide study covering all lands. The Region assumed the responsibility of providing inventory data for government and private lands within the

National Forests. The Act provided for a report to be presented to the Legislature by March 1959. This act was the primary reason for this Region to initiate an inventory before national standards for the anticipated NFRS were set.

In due time data was delivered to the State in a form requested by them. Projections of demand had not been perfected and the 1958 inventory was not limited to the projected need. Since the inventory was later reduced by closer site selection and more refinement, the area reported to the State as suitable for occupancy is considerably greater on most forests than is reported as available in the NFRS. The report to the State, approved by the W.O. clearly points out that the area reported as suitable for recreation is not necessarily available since multiple-use management decisions were yet to be made. When completed the statistical data for National Forest lands should be delivered to the State Division of Recreation, Department of Natural Resources, which has now superseded the unattached plan committee. At this time the difference in reported area should be made clear.

An additional difference must be noted in these reports. The NFRS demand projection for forests was, in general, recorded as determined by regression equations projected against population and other factors effecting use forest by forest. In the report to the State, statewide demand projections were balanced between forests by judgment, thus distributing at the beginning excessive demand projections for such forests as the Angeles. This directly effects the surplus and deficit figures which appear in the two reports.

The report to the State of California, is entitled: Report to the California Outdoor Recreation Plan Committee Covering a Recreation Inventory of National Forest Lands, August 1959. Copies of the report are on file in this office and in the office of each forest supervisor. A copy has been sent to the Washington Office.

The California Public Outdoor Recreation Plan

The California State Outdoor Recreation Survey was authorized by the California Public Outdoor Recreation Plan Act (A.B. 32, Chap. 2318, July 15, 1957). This act provided for the preparation of a recreation plan for the State of California and established a committee for that purpose.

Technical consultant groups and advisory boards were appointed and work got under way late in 1957.

A field inventory of recreation resources and studies of user habits and trends were made in 1958 and 1959, and final reports are in preparation at this time.

The Forest Service cooperated in the survey of national forest lands and private lands inside their boundaries. Other agencies contributed resource data for their areas. However, the Forest Service was the largest contributor of resource data. The Forest Service contributed to a lesser extent in user surveys both as a member of the technical advisory group and as a contributor to the study. The Forest Service worked regularly with the Plan staff and committee and we believe contributed a great deal to the philosophies of the study.

The final report of the committee will be in two parts. Part I is completed. It covers in general the philosophies and responsibilities of various levels of government for public outdoor recreation. The second part will be a more detailed report on the resources and user needs for outdoor recreation, projections of demand, and recommendations on how the needs might best be met. It will be designed primarily as a planning guide for local agencies.

We have had the opportunity to review and comment on recommendations in a preliminary report. This has since been completed and discussed in public meetings. Final publication of Part II is expected shortly but will probably not be available until presented to the Legislature.

Two major subjects are covered in the Part I report. The first is the use pattern as determined by user surveys for each type of outdoor recreation activity as related to the point of origin of the user. This study covers the extent of day use, overnight stays, and extended visits for each type of activity such as camping, picnicking, water sports, snow play, etc. from metropolitan or urban areas. Statistical data were derived from questionnaires prepared at points throughout northern and southern California and by mail.

From this data conclusions are drawn as to the distance from urban centers that may be considered day use, overnight use, etc. These lead to a number of other conclusions and recommendations, two philosophies of which are important to national forest management as follows:

1) "It is the responsibility of the local jurisdiction to provide for day use requirements of its residents within urban and adjacent day use areas."

   Day use is an area within about 40 miles of the urban center. This day use area includes a considerable area of National Forest, especially in southern California. It also includes state parks and beaches. The "responsibility for local jurisdiction to provide" is qualified to mean that it is the responsibility to see that facilities are provided either by the city or county, by concessionaires, or by other jurisdictions. Where public development is specified the recommendation suggests that on federal lands the local jurisdiction finance the facility.

The recreation Plan staff and committee are well aware of Forest Service responsibilities and policies in respect to the recommendation. A second recommendation indicates some of the thinking in this regard.

2) "That the State establish an office with the State government whose purpose will be to coordinate the planning and development of outdoor recreation facilities in areas of overlapping jurisdictions."

The need for this function on a State level is aptly portrayed diagrammatically by an illustrated map showing several autonomous communities adjoining each other, involving two or more counties, a nearby National Forest, a National Park, and State parks and beaches. Day use, overnight use, and extended use circles are superimposed on this lot. This depicts a typical southern California complex. However the situation occurs to a less complicated degree in almost all national forest areas.

Both of the recommendations above have been reviewed and endorsed by this office in principle. In so doing we recognized the principle of "concurrent jurisdiction". We believe the coordination of planning will be of great benefit to the whole recreational program in the State including the Forest Service part in it. It may also include and support coordination of recreation development related to the project work contemplated in the State Water Plan which involves a great many agencies. It should provide the answers to whom, what, and where in the many areas where there is no coordination at the present time. By proper multiple use planning on a forest level and participation in coordinated recreation planning as proposed by the State, there appears to be a means to direct demands on the National Forests into channels compatible with national forest objectives and philosophies.

The final portion of the State report will cover the details of the area requirements necessary to meet the needs of an expanding population in the years ahead, the potential capabilities of various jurisdictions of government to meet and provide for these needs, and the land and water area (public and private) which can be used for this purpose. We have no information at this time as to the recommendations or discussions that will be part of this report. We have been assured we will have opportunity for review and comment. We do not know that there will be no specific recommendations as to specific areas or what should be done with them.

Recommendations of the California Outdoor Recreation Plan Committee Report, Part I, having significance in policy and planning in the National Forest:

Letter to Governor (p. i. of report)
In order to obtain the greatest benefit from this study, we believe that continuous coordinated effort with all levels of government and private enterprise is essential. It is logical that responsibility for keeping this program alive be assigned to the Division of Recreation, Department of Natural Resources, which has authority for making such studies and providing intergovernmental coordination under the provisions of Section 8700(e), Public Resources Code.

R-5 Comment: The Director of Natural Resources and the Chief of the Division of Recreation (State) recognize Forest Service responsibilities and do not pretend dictating to the Forest Service in the coordination process. This has been discussed with them and it is agreed that the principle of concurrent jurisdiction will apply should conflict arise between the State and the Forest Service in the use of any particular area. (See remarks under succeeding recommendations.)

Recreation Travel (pp. 18 and 19)
Recreation usage of highways will continue to increase and should therefore command a high priority for highway location, design and appearance. Advance highway planning programs, concerned with areas of recreation usage and development of highway routes to serve that usage, should be a regularly continuing function of the State.

The State should provide such wayside areas as rest stops, turnouts, and scenic overlooks, located to serve travelers, with a minimum of use by local residents. Wayside rest stops should offer potable water, facilities for eating, cooking (if possible), sanitation, parking, and (in some places) enroute camping. Where desirable wayside locations are not on highway rights-of-way, the State should encourage owners, public or private, to allow or provide wayside facilities on their lands.

Highways and wayside facilities should be de-emphasized in regions where they will have a detrimental effect upon wild or semi-wild areas.

Mass transit facilities for major urban centers should serve nearby recreation areas (beaches, sports centers, auditoriums, fairgrounds).

R-5 Comment: In planning recreation use along major highways (through routes) provision should be made for the type of facilities described. In some cases it may be necessary to limit campgrounds along such routes to overnight stops while providing areas off highway (1 to 5 miles or more) for longer stays. In the matter of who should develop and administer such areas, the decision should be based on whether or not the facility is part of the highway development.

Sightseeing and Study (p. 22)
Areas, features, or artifacts should be acquired in the following order of priority: (1) those of national or statewide significance most subject to loss and (a) within the critical 40-mile, day-use radius of major urban centers, or (b) beyond the day-use range; and (2) those of regional or local significance that are within a 40-mile radius.

Sightseeing should also be accommodated in non-recreation areas, with emphasis upon (1) the coastal strip, particularly within 100 miles of San Francisco and near Los Angeles; (2) scenic mountain, valley, or lake areas not under public protection but near urban centers; (3) unique or representative natural elements in the landscape; (4) significant historical areas or artifacts of nonrecreational lands subject to encroachment; (5) contemporary man-made developments of high sightseeing value.

A permanent board of review should be established to inventory, study, and recommend features that should be developed or protected for their scenic or study value. Financial responsibility for the development or maintenance of scenic features should be shared by government jurisdictions in proportion to the amount of benefits to the people of each.

Private enterprise should be encouraged to provide access, facilities, or interpretive services at sightseeing areas, of a quality recommended by the government jurisdiction.

> R-5 Comment: This recommendation would appear to direct state and local attention to non-national forest lands, i.e. lands subject to being lost. There is no assurance of this, however, and other agencies may consider themselves more able to preserve certain national forest areas better than the Forest Service.

Picnicking (p. 24)
Federal, state and local governments should be responsible for the provision and maintenance of picnic facilities at intervals along major highways and scenic routes in California as part of a statewide wayside rest system. These should supplement the larger park and forest facilities located on travel routes.

Agencies providing picnic facilities should improve their substandard facilities and endeavor to supply enough facilities to keep pace with current demands.

Agencies providing picnic facilities should establish a "maximum safe level" of use for their facilities as a means of protection against overuse and exorbitant maintenance and replacement costs.

Major responsibility for provision of picnicking facilities specifically designed for large organized groups should be assumed by local government and private enterprise.

The layout and design of picnic facilities should be such that units can be shifted to new sites within the same area when detrimental effects to the soil and cover are evidenced.

> R-5 Comment: This suggests that the Forest Service develop wayside rests on national forest land. Our inventory includes wayside rest opportunities, but this region has not considered wayside rests for national forest development on the premise that they are part of highway development and thus a state or county responsibility. Several national forest areas have been so developed.

Camping (p. 27)
A well-balanced, statewide system of "en route (one-night) areas" should be initiated. These areas should be immediately adjacent to the major travel route, in pleasing and restful environments if possible, where they will be available not only to California travelers, but also to the many thousands of out-of-state visitors. En route camp areas should provide minimum facilities for travelers to spend the night and prepare their meals. The space and facilities can be less than those provided at destination areas, for the campers' stay should be limited to one night. The en route camp areas should not become overflow camps.

All existing "destination" camp areas that have substandard facilities should be improved, especially with respect to water supplies and sanitation. A study should be made to determine if the existing space and facilities of each campground are now being effectively utilized. Where there is no danger of destroying the attraction or the area, then the capacity should be increased.

Areas already held in public ownership that can be develped into suitable campsites should be considered for development; additional areas suitable for camping should be acquired. As many camp sites as possible should be located close to large urban centers, or within reasonable traveling distance of them, in order that the maximum number of persons can enjoy the facilities provided.

Beach campsites should be developed on uplands adjacent to the beach, rather than on the beach itself.

A research program to discover better management and maintenance methods for our camping areas and facilities should be immediately undertaken so that the detrimental effects of overuse and abuse can be arrested and corrected.

Private enterprise also has its place in recreational camping. The use of private lands and capital should be encouraged to develop additional overnight facilities.

R-5 Comment: See comment under recreation and travel. This recommendation in some areas may be partly in conflict with a later recommendation which provides that where "day use" needs are in conflict with other needs the shorter stay use should prevail. On the Angeles and San Bernardino forests the need for decision as to whether areas should be used as a camp or picnic grounds will continue to arise. Since both needs cannot be fully met, planning should attempt to arrive at a reasonable balance rather than exclusion of one or the other.

Boating (p. 34)
All bodies of water, potentially available to the public, should be carefully appraised for the improvement of existing, and the development of new, boating facilities. Emphasis should be given areas surrounding population centers.

Reason for the lack of use of offshore areas of large bodies of water should be determined and analyzed. Methods must be devised to increase their utilization because water will be in short supply by 1980.

Reservoir operation policies should be modified, where feasible, to enhance the recreation opportunities and the user who enjoys this increased benefit should contribute to these costs. Methods should be devised to better adapt boating facilities to fluctuating shorelines.

Conflicts between boating and other water uses (recreational and nonrecreational) should be resolved or minimized.

Boating water areas should be developed to satisfy as varied a range of other recreation interests as practical for well-balanced operation.

With craft now in production, areas now considered unsuitable for boating may be popular within a few years. Present marginal areas should be reserved for future development.

R-5 Comment: The NFRS projection for use of national forest waters for boating is considered very low. The State is probably correct in stating "water will be in short supply by 1980". The NFRS indicates surpluses in this resource. Time will show who is right.

Winter Activities
Forest openings that have gentle slopes and adequate space to handle several hundred persons, located at intervals along major highway routes, should be designated as snowplay areas. Adequate parking off

the roadway should be provided. Not only would this provide recreation but it would also alleviate the dangerous roadside parking condition that now exists. All governmental agencies that operate roadside picnic grounds, camp-grounds, and roadside rests should make portions of them available for snow play use.

Capital from private investors should continue to be the means by which skiing resorts are financed. Governmental agencies in charge of recreation areas set aside for year-round use that have snow and slope conditions for winter sports, should develop skiing facilities if there is sufficient need and private capital has not been attracted.

The State of California should promote snow areas as a part of its general tourist promotion.

The federal government should encourage winter sports developments in those national forests in California where needs are greatest.

Operators of skiing resorts should endeavor to bring their parking capacities in line with the capacities of their skiing facilities.

The state and county governments should provide consistent snow removal service on major highways in snow areas and cooperate with winter sports operators in the clearance of snow on roads leading from highways to the winter activity facilities.

> R-5 Comment: This recommendation supports our own findings. In planning and administering camp and picnic areas along highways cleared of snow in the winter it will be necessary to plan and develop facilities, particularly sanitary facilities, for winter use as well as summer use. A further need in winter sports planning and development which is indicated is that of providing facilities for snow play - to provide for the winter picnicker as we do the summer picnicker.

Other Recommendations (pp. 64, 65 and 66)
Acquisition of land for recreation at resource development projects should be adequate for the life of the project. On water projects, this should also include a strip of land completely surrounding the water. Such land should be acquired, at the time of initial land acquisition, by the agency responsible for construction.

To plan properly and develop well-rounded recreation areas in portions of the state with complicated land ownership patterns, a program for consolidation of public and private lands through exchange or purchase is needed.

The costs of replacing fish and wildlife and recreation resources destroyed or lost because of the construction of any project should be borne by the developing agency.

In water project developments, methods should be found to finance the cost necessary to retain recreation water in storage and to supply downstream recreation requirements.

R-5 Comment: This is now the thinking insofar as State projects is concerned. We concur in the recommendations, particularly where private power projects are proposed.

Basic Recreation Criteria for Meeting Total Needs (pp. 55 & 56 Items 1-7

Recreation needs are interrelated as are their suppliers. When the suppliers are governmental, there are serious intergovernmental problems in meeting recreational needs. No single level of government can plan for recreation without affecting the recreation planning of other levels of government. Primary responsibility for assuring coordination of proper responsibilities can best be effected by a single agency of the level of government which has the best opportunity to influence an orderly program at all levels of government.

R-5 Comment: This leads to subsequent recommendations that the State establish within the Department of Natural Resources, Division of Recreation, a coordinating agency. Counties have indicated they will resist compulsory direction by the State as part of their home rule policy. Federal land agencies will insist on having final say as to use of lands under their jurisdiction. All agree to the need of coordinated planning on a voluntary basis.

Appropriate recreation should be provided close to the community. This permits greater freedom of choice of recreation opportunities especially to low income and low mobility groups, greater safety because of shorter trips en route, and more time at the recreation area. It also benefits the economy close to where the user lives, and protects more distant recreation areas and open spaces which might be spoiled by the intensive development required for close-in recreation.

R-5 Comment: This may have some effect on planning on several national forests with areas lying within 1 hour of metropolitan areas, i.e., Angeles, Cleveland, San Bernardino, Los Padres and Sierra.

When recreation is sought away from home, the quality of the entire experience is dependent upon pleasant travel to and from the recreation site. Traveling in itself has become the entire recreation objective of many. Recreation travel should be one of the primary considerations in determining routes and standards of roads. Adequate waysides and other scenic, historic, and recreation features help to assure that en route travel enhances rather than detracts from the over-all experience.

R-5 Comment: The increasing numbers of people who prefer touring with one night stands at interesting places (this may be a trend) increases the importance of scenic zones and areas and the need for overnight roadside stopping places.

When recreation demands or recreation resources are conflicting or competitive, short-stay recreation should be given priority close in, and recreation involving a longer stay should be planned for more distant areas.

R-5 Comment: See comments on the recreation under Camping. Coordinated planning with the state and county may help to resolve the problem of priorities of use, i.e., day use as against overnight use.

Government should determine what types and amounts of recreation opportunities are a right and which can be offered only as a privilege. Government should first protect, provide, or assure the provision of recreation that is a right, and only secondarily employ its resources in privilege types, or encourage nongovernment suppliers.

R-5 Comment: Unfortunately, this study has not attempted to define what form of recreation is a right and what is a privilege. We might presume that use of public land for recreation and general enjoyment within the framework of laws and regulations is a right. All other use is a privilege. However, this needs to be defined and agreed upon in general.

Advance planning which considers all land uses in concert is essential in meeting total needs for recreation. Where possible, recreation should be integrated with compatible nonrecreational land uses.

R-5 Comment: We concur.

Responsibilities in Meeting Total Needs (pp. 58, 59, 60, 61, 62, and 63)

The role of government in recreation should be to provide recreation resources, facilities, and services that must be continuously available at minimum cost to the user. Nongovernmental, competitive private enterprise should be encouraged to establish recreation facilities, supplies, and auxiliary resources that can be furnished to the public at an acceptable quality, quantity, and price.

R-5 Comment: We presume that the last sentence assumes that this must be at a profit, however reasonable.

The federal government should continue its cooperative planning with states and local governments for providing areas and services primarily for persons on overnight or longer trips. When local

Zone 1 and 2 recreation needs can be met only by use of federal lands, the local government, whose residents provide the day-use impact, should reimburse the higher government.

> R-5 Comment: Initially this recommendation provided for local government to be responsible for developing such areas per se. It has been revised. However, there is yet danger in accepting money for area development as it provides a stepping stone to take over areas. There is less danger in federally financed development followed by co-op deposits by local agencies for operation and maintenance.

County government should provide Zone 2 types of recreation within the county when the areas will be used almost exclusively by residents of the county. When day use of a state or federal recreation area is almost exclusively by residents of a metropolitan area, or its Zone 2, a "supervention" of financial assistance to the higher government is indicated.

The city should accept responsibility for provision of certain facilities beyond its borders that cannot be provided within city limits because of space or environment limitations.

> R-5 Comment: This repeats again part of the intent of an earlier recommendation. This is one means of implementing the philosophy so often expressed that the jurisdiction that benefits most in terms of user needs should provide for the facility. See further comment above.

The state is responsible for the health and welfare of its citizens and is the guardian of its natural resources. It should assure that its citizens and its visitors have adequate recreation opportunities.

The state's role, as a supplier of recreation, should include a positive program based upon an analysis of the needs of people rather than on unrelated local pressures. Its primary responsibility should be to assure facilities for overnight use and for day use by persons on overnight trips. These facilities should be planned to complement those of the federal government.

Areas of natural scenic, scientific, educational or historic value, and which are of state preservation caliber or of statewide interest, should be preserved in state ownership. This should result from a vigorous state initiated program scheduled to acquire the best examples of all recognized categories. Acquisition should be as early as possible to reduce to a minimum encroachments of adverse use or deterioration that some areas experience while waiting for acquisition. Preservation, restoration, and interpretation should proceed according to an accepted plan which considers statewide significance.

R-5 Comment: This implies state development of wayside rests for day and overnight use as a complement to federal land development. It also implies acquisition of areas of statewide interest for preservation and management by the state regardless of jurisdiction.

It makes it incumbent on the Forest Service, in long range recreation plans, to select and designate outstanding scenic, geologic and similar areas so as to demonstrate the intent to preserve.

In meeting recreational demand today the greatest need is for more cooperative planning and coordination between government and non-government, between levels of government, and between agencies. This function of coordination should be assigned to the Governor and to an agency. This agency should be broadly representative of recreation interests.

In order that coordination and planning be effectively achieved, it is recommended that the present Recreation Commission be reconstituted to include the directors of the state departments who have responsibility for recreation and land uses in the broadest sense, representatives of local and federal governments, and representatives of the general public.

Under the leadership of the reconstituted Recreation Commission, the Division of Recreation, Department of Natural Resources, should carry out the functions of cooperative planning and coordination. Incorporated within this planning and coordination framework should be provision for the establishment, as necessary, of advisory groups to assist in solving problems in all types of recreation.

The State Statutes which provide for these functions (Public Resources Code 8600-8704) direct, among other things, that the following be done:

1) Cause the whole problem of recreation to be studied.

2) "Make studies and surveys and long-range plans for recreational facilities and programs necessary to meet recreation needs throughout the state, and participate with other federal, state, and local governmental agencies in advance planning with respect to development and coordination of recreational facilities and programs."

3) Recommend a comprehensive recreational policy for the state.

4) Encourage, assist, and coordinate recreational programs at federal, state, and local levels.

5) Report annually to the Government on the needs for recreation.

Since the problems of intergovernmental and interagency coordination are among the most pressing to be solved if total public recreation needs are to be met, it is urgent that the agency take immediate steps toward coordination of recreation programs. The agency should provide aid to other levels of government particularly in the form of planning that will assist each level to provide its share of the total recreation requirements. It should develop more fully methods to set and appraise standards for recreation services. It should also be in a position to devise means to resolve intra-agency, interagency, and intergovernmental problems and conflicts. The agency should make recommendations on methods of administration, operation, and financing of projects so that each level of government will assume an appropriate role.

The agency should be staffed so as to be able to forecast trends in demands and plan effectively not only on a basis of projected present needs, but also in the light of technological developments that may lead to new types of recreation or alterations of present recreation patterns.

R-5 Comment: The need for a coordinating agency within the state government is pretty generally accepted. The authority of such an agency has yet to be defined. City and county governments are loathe to relinquish local home rule and self-determination; yet they want this assistance. Federal and state agencies with responsibilities for outdoor recreation likewise are not authorized to subordinate their land management responsibilities. Undoubtedly, a state coordinating agency will be established, but its authority will in all likelihood be limited so that the following of state proposals is voluntary.

The outcome of the proposal will be to encourage better planning by all agencies having outdoor recreation responsibilities or opportunities, and it will provide the means to bring agency plans together for coordination and adjustment.

Coincident with the California Recreation Plan project, eleven southern California Counties joined in forming a committee under the auspices of the Southern Empire Association of County Supervisors for the purposes of studying the problem of outdoor recreation in the 11-county area and for preparing a plan. The primary reason for this activity was undoubtedly the protecting of the policy or philosophy of local control held so strongly by California's County Supervisors Association. The Committee developed an inventory procedure and format for their use somewhat different from that of the State Committee. For the sake of consistency and as a cooperative effort, the national forests involved prepared data for the county groups from the 1958 inventory and delivered it to the County group early in 1959 on forms provided by them.

Data delivered to the State and to the County group consisted of district or County summaries. Data was not furnished on individual sites.

From time to time other counties have requested data for their planning agencies noticeably the Plumas, Shasta, Placer and Nevada Counties. Others are expected to follow. Henceforth when released the NFRS will be the basis of reply to these requests and for refinement for those groups already in possession of inventory data. Private land data will still have to be based upon the 1958 survey.

The county agencies have not yet prepared a report or made recommendations.

II OUTDOOR RECREATION ON THE NATIONAL FOREST

The national Forests of California, comprising about 1/5 of its area extend practically the length and breadth of the State.

Except for a few small towns along the coast north of San Francisco there are no communities that are more than three hours distant by auto from a National Forest.

National Forests almost completely surround the great central valleys and encompass the major mountain masses of Southern California.

Because the forests extend throughout the State and because they take in the main mountain ranges, California's National Forests provide the major publicly owned wild land recreation resource.

In many areas, the National Forests are so close to metropolitan areas that they offer important day use recreation opportunities. It has been said of the Angeles National Forest, for example, that it provides backdoor recreation for the City of Los Angeles. In Southern California generally, the forests provide mountain recreation and the State beaches provide seashore recreation. There is little wild land recreation opportunity in between.

A. Kind of Recreation Provided on National Forests

1. Area and Capacity of Developed Sites and Dispersed Areas.

Almost every kind of outdoor recreation is to be found on the National Forests of California somewhere. Some rough estimates of the proportion on a statewide basis follow:

Activity	Proportion on Nat. Forest	Established Acres 1960	Remarks
Camping	50%	5058	
Picnicking	10%	532	Exclusive of city parks and beaches
Organization Camping	75%	3063	
Comm. Pub. Service	Incidental to Other Use	925	
Summer Home	15%	5265	
Swimming	Incidental	84	
Boating	2%	94	
Winter Sports	90%	6650	
Dispersed Areas			
Wilderness	100%	1,610,625	70% if no park wilderness is included
Unusual Interest	5%	54,126	Exclude historical sites and natl. mts.
Hunting-B.G.	60%	16,330,000	(Hunting
Hunting-S.G.	5%		(Acres
Fishing	30%	101,599	Except salt water
Boating (water)	20%	76,012	" " "
Mountain Climbing	35%	-	Remainder on N.P.

As stated, these are only rough estimates. However they do serve to show that the National Forests are the most significant outdoor recreation areas in California and cover the widest range of activity though not perhaps the most spectacular.

Because of the large area and the relatively low degree of development, the National Forests offer the only suitable large areas in public ownership in which to expand general outdoor recreation. Expansion in State and county areas requires acquisition of new areas. National Park expansion opportunities (of development areas) are physically limited as well as being limited by the purposes and objectives of the parks.

A. General Discussion of Developed Sites

Campgrounds

The National Forest recreation survey inventory of established areas lists 5,058 acres of campgrounds as of January 1, 1960 with 10,275 family units (including some picnic units in camp areas) with a nominal capacity of 57,600 persons at one time. Based on NFRS converting factors this development has a safe capacity of about 5 million visitor days. This would indicate an over-use of almost 50%. This would indicate a need to increase campground development by 50% to take care of present use safely. However, we have no idea of present demand or what we would need so that everyone who wanted to camp could find facilities to do so. New development needed would vary from 100% in some areas to none in others.

The bulk of the campgrounds in Region 5 were developed (or redeveloped) during the 1930's to standards then applying. At present no more than 10% of the Region's 10,000 camp units are up to 1960 standards with modern facilities and adequate traffic control. Present needs would require rehabilitating 9000 units in varying degrees and constructing 5000 new ones to take care of 1960 demands with 1960 standards.

Picnic Areas

532 acres of established picnic areas were inventoried in the NFRS. 79 sites were developed with some 880 family units with a reported capacity of 5,118 people at one time. Safe capacity for this area based on NFRS standards is estimated at 532,000 visitor days per year. Reported use for 1959 was 1,272,000 visitor days (this includes picnicking in camp areas as well as on the above area). It is safe to say however that establishedpicnic areas are used from 50 to 100% in excess of their safe capacity. Approximately 50% of the installed picnic units are to 1960 standards.

Present needs indicate rehabilitating about 450 picnic units in varying degrees and installing about 800 new units to meet use requirements.

In some areas, particularly on Southern California Forests the demand for picnic sites is so great that it causes some consideration of converting camp areas to picnic areas. Since both are needed within day use areas, according to State studies, coordinated sub-regional planning with states and counties is desirable to

resolve the question "How much of the limited suitable area should be devoted to day use and how much to overnight use."

Winter Sports Sites

The NFRS inventory of established sites lists 6,650 acres of winter sports sites as of January 1, 1960. 42 sites are listed as developed, parts of some of these are on private land with a reported normal capacity at one time of 41,275 people.

Use reported for CY 1959 was 1,344,000 visitor days.

Capacity from area to area and site to site varies depending on many factors. Length of season, and parking provisions are two of the most important. Reported winter sports sites and use are almost entirely for ski areas. A great deal of use of undeveloped land for snow play, perhaps totalling more in numbers of visits than the number reported for developed areas, is evident. Most of this is reported as "Other forest use". It varies from as little as 10% of the total winter sports activity to as much as 75%/

Generally the Region is keeping up with demand for skiing areas but is falling far behind in developing sites for snow play. Ski development lends itself to commercial operation and so tends to keep pace. Snow play however, except in a few areas, does not lend itself as well to commercial development. It is largely "day use". It needs to be served by adequate parking, gentle slopes, sanitation and picnic facilities. Family groups are larger than for ski areas.

Some administrative study is needed to find how best to serve snow play. A start is being made on the Angeles Forest this winter (1960-1961). This preliminary study should indicate what factors in snow play development need further study and provide information for evaluating the economic problems involved in snow play area development. There are many possible solutions but the two principal problems are parking and sanitation.

Organization Camps

The National Forest recreation survey records only slightly less area in the organization camp category than that reported in the regular statistical reports; 3063 acres as against 3329 acres. The difference is due to the procedure of reporting buffer and developed area. Regular statistical reports list area under permit which often includes considerable buffer. In the NFRS buffer is recorded separately.

Organization camps generally are not used to their fullest capacity in California except in a few areas in Southern California and a few municipal and university camps in the Sierra. The reason for this is that many camps are owned and operated by a single group which does not provide multiple organizational use. Some areas in the south do

provide for multiple use, some by special use provisions, others for their own economic reasons.

Most camp areas have simple if expensive facilities such as dining halls, lodges, cabins, pools and play areas. Others such as a few Boy Scout areas have only sanitation and wash facilities, and dining halls. The trend is toward simple facilities for camping out. This should be encouraged.

A recent organization trend is the formation of boating clubs to acquire use and develop lakeshore areas for members. Their purpose is to provide camping and launching facilities and occasionally docking facilities. This seems to be a good trend but must be limited to lakeshores where there is ample space for public use or if boat clubs would operate areas as concessions open to the public.

The annual 446-U1 report for 1959 lists 12 organization sites on 71 acres where facilities are owned by the Forest Service. Some of these are abandoned CCC camps. In addition, 227 sites on 3258 acres are listed for camps where facilities are not owned by the Forest Service. Listed capacities for both types is 29,150 persons.

Hotels and Resorts

This site class includes all commercial public service operations on government lands serving recreation. The instructions are not clear in this use and there may be some variation in reporting. The use of such areas is misleading as reported if considered in relation to the title of the use class. Under the NFRS this was renamed commercial public service sites. Perhaps a new class is needed which would include only sites furnishing overnight accommodations and a new class of commercial service to recreationists such as is provided by stores and restaurants.

In 1959 the Region had 149 such sites on 1101 acres with a capacity of 20,390 persons which we presume is the bedroom capacity. NFRS reported 925 acres developed area in this class. The difference as in organization sites is due to the inclusion of buffer area in the 446-U1 report.

It is difficult to judge whether or not development of commercial public service sites has kept up with demand. Undoubtedly many sites would be taken up and developed if of good quality and well located. However new sites are only offered if there is a demand. Demand is usually demonstrated by requests for a location by a prospective permittee, rather than by a measured need. Probably the largest future development of public service sites will be in connection with new water development where all sorts of commercial services will be needed that can best be served by concessionaire development.

Recreation Residence Sites

Statistical reports for 1959 list 405 sites totalling 4499 acres, an average of about 11 acres per site. Listed capacity is 40,780 persons on 8682 lots, an average of about 4.7 people per lot. The average number of lots per developed acre is about 1.95 or .51 acres per lot. Actual lot size of course is much smaller, perhaps in the neighborhood of .27 to .30 acres.

NFRS lists 5265 acres of developed sites. The reason for the difference is probably the inclusion of service road areas, turnarounds and water system areas as developed area in the NFRS.

There is little or no relation between the number of summer homes on National Forests and demand since the development of new areas is limited by policy and reluctance to develop new areas because of past mistakes. Development of forest recreation plans may relieve some of this reluctance but the allocation of low quality sites to summer home use will continue to hold development back. Undoubtedly we could lease every lot we might by layout on waterfronts or highway fronts in desirable areas. However, despite district-wide surpluses in recreational site area, quality sites in the desirable areas will fall short of fulfilling the needs for public use areas on most forests.

Swimming Sites

Generally, development of swimming sites is incidental to other forms of development such as camp and picnic areas. In a few cases, as on Lake Tahoe, the swimming beach is the primary attraction and picnic area development is incidental to it.

The 1959 statistical report lists 24 swimming sites totalling 163 acres. NFRS lists only 84 acres in this category. The difference is due to the definition of developed area. Capacity estimates for such areas are unsatisfactory. How many people can use an acre of good swimming beach? Often the limit is set by parking capacity, in a few the limit imposed by the water itself. In a few areas it may be necessary to limit use administratively due to pollution potentials. Pinecrest (Strawberry Lake) is an example, so is Crystal Lake on the Angeles.

Probably a reasonable beach and parking area capacity is around 2500 visitor days per acre. This low level of annual use capacity is due largely to the limited season of use in most National Forest areas, and to the short period of the day swimming areas can be used.

Maximum capacity of a good sand beach at one time is probably around 400 persons per acre. The average capacity for most beaches on forest areas is probably 1/4 of this.

Generally, beach development is behind the needs for optimum management and use. However, many areas have a use level too low to justify development at this time - cold water or cool climate often limit use to but a few hardy souls.

New water development at middle elevations will undoubtedly require greater development in the future.

Boating Sites

Boating sites have not been listed as a use class in past reports. 94 acres are listed as developed in the NFRS report, many without adequate car and trailer parking facilities.

The primary need on most boating sites is for improved launching ramps and organized parking facilities. Many also need service facilities for boaters such as gas and oil launching aids, etc. Many of our present boating sites are lacking improvement and management.

Boating sites, because of the requirements of access, slope to fluctuating water levels, parking area and turn-around space and are probably the most valuable recreation sites on National Forest land in many areas. Very often the boating capacity of large lakes is limited not by water area but by access and launching sites.

No statistical data is available for capacity of boating sites on National Forest lands. However the NFRS indicated a per acre per season capacity (for a 3 month season) of 4435 visitor days (boat use) per acre of launching site. This use involved 1386 boats per acre of site (put in and taken out) for the season. The average adequate site is about 12 acres including parking and service area, usually with 2 ramps and turnabouts. Design can improve the efficiency of ramps so that adequate turnabouts and continuous launching area is available in many cases. However the maximum that can be expected per ramp (one boat at a time) is about 50 "in" and 50 "out" per day. This average is based on an average of 5 minutes to each launching and recovery during a little over an eight-hour day. This rate is achieved in only a few places, however. In most cases boaters crowd the launching ramps like commuters, all at once.

Quality

In the foregoing discussion we have not attempted to discuss quality in detail. Generally speaking, the best quality sites on National Forest land have been developed within the local areas. However, these are not always the best quality, per se, since in many areas better quality areas are privately owned and thus not available. Similarly the developed sites are not necessarily the best district-wise since location is very often the first criterion for development.

Site quality varies from forest to forest and district to district. Generally the best recreation sites are water oriented in the Sierra and the Siskiyou Mountain areas and the poorest are in the south.

B. General Discussion of Dispersed Areas

Hunting Areas - Big Game

Big game hunted in the California Region consists primarily of deer and bear. Vestigal herds of Mountain Sheep, Roosevelt Elk and Antelope occur in the State some of them on the National Forests. However, some of these are fully protected, others are hunted only under a permit system to control the size of the herds. They can be ignored as far as hunting for sport is concerned.

We have no accurate figures as to what proportion of big game hunting in California occurs on the National Forests. Possibly 80% or more of the California deer herds spend part of the year on National Forests. 60% or more of California deer hunting occurs in the National Forests. It seems safe to say that over one half the deer hunting in the State is on National Forest land.

Bear are hunted so lightly as not to be significant in the total hunting effort on the National Forests.

Five principal deer species are found in the national forests of the State, Columbian Black Tail, Rocky Mountain Mule, Inyo Mule, California Mule and Southern Mule deer. Rocky Mountain and Inyo Mule Deer are the most popular because they are the biggest, but the largest part of the hunting is for California Mule throughout the west slope of the Sierra and Columbian Black Tail, a small deer occupying the coastal mountains and parts of Southern California.

Of all our recreation use statistics those on purpose of visit, which includes hunting, are the least reliable. There is little if any statistical sampling upon which to base our estimates. Most are based on empirical assumptions to begin with and are raised or lowered by sampling numbers of people in key areas. As stated earlier in this report, even trends in hunting may be questioned since we note that during the past few years the sale of hunting and fishing licenses, statewide, have declined or held steady, while our estimates of National Forest use for hunting have continued to increase.

The reported use in huntimg for the 10 years period 1950-1959 in visits follows. Only about 10% of the reported use is for small game, the remainder is big game.

1959	930,187
1958	801,430
1957	770,888
1956	764,681
1955	692,067
1954	643,146

1953	574,584
1952	502,186
1951	439,367
1950	317,129

The quality of hunting varies in different parts of the State. In Southern California whose brush fields have a huge capacity to produce deer, are difficult to hunt without man made access. Potentially, with habitat development in the way of browseways and hunter access much more hunting could be realized. Much of the southern area is closed to hunting during the present season. Columbian Black Tail and Southern Mule Deer are the primary species.

While close to large populations the Southern California areas are not popular because of the difficulties of hunting. A winter hunting season is needed here if the total hunting potential is to be realized.

Throughout the main Sierra Range, hunting area quality is much higher than in Southern California because of climatic conditions, timbered slopes, open glades, and meadows. This is the range of the California Mule Deer.

In the northeast and eastern Sierra such as the Modoc, eastern Klamath, Shasta, Lassen, Plumas and Inyo, the Mule Deer country, the hunting quality is the highest; open timber stands, sage flats and meadows are the cover types - rolling topography; easy to hunt, pleasant climate. Because of these conditions hunting pressures will probably always be the greatest in this area.

The northwest National Forests, the Six Rivers, Trinity and western Klamath and Mendocino, predominantly Columbian Black Tail Deer country, varies in desirability and quality probably more than other areas. The Mendocino and a small part of the Six Rivers receives heavy hunting pressure with a relatively high success ratio. The country, while steep has a variety in cover and produces lots of deer. The main Six Rivers and part of the Klamath and Trinity are steep, densely timbered or have heavy brush cover. Hunting is difficult although there seems to be plenty of deer. The cover is such that the deer are hard to find and harder to get a shot at. As timbered areas are cut-over hunting conditions will undoubtedly improve.

Hunting Areas - Small Game

Statistical records indicate that about 10% of the hunting effort on the national forests is small game. The principal game species hunted are quail, band-tail pigeon (migratory), rabbits, and non-game species such as ground squirrels sought for live target shooting. Chukkar partridge have been introduced on a small section of the Inyo. These provide a small amount of hunting.

Small game hunting in the California forests is very scattered and spotty. Most of it is confined to areas along roads or streamsides and near small communities. Seldom is small game the primary purpose of a trip. A good proportion of the use is by juveniles hunting rabbits and squirrels with .22 caliber rifles.

In Southern California most small game hunting is for band tail pigeon and quail. While there is a great deal of hunting for these birds in the Southern California area only a small portion occurs on National Forests. Most of it is carried on on ranch properties adjacent to the forests. As in the northern forests the use is so scattered that the areas cannot be broken down into significant units such as might be done for big game.

Hunting - Waterfowl

There is no data available on the hunting effort for waterfowl in the National Forests. Most of the effort in the state is outside the forests in the Central Valleys and upper Klamath River Basin or on private land. A few lakes along the Pacific Flyway are hunted to a limited extent, principally on the Modoc. Undoubtedly new reservoirs to be constructed will furnish waterfowl hunting in the future such as the Upper Feather River projects in the eastern Plumas.

Hunting - General

The NFRS lists a total of 20,295,670 resources acres of hunting area in the region; 16,329,975 is net big game area. Over 1-3/4 million more acres (1½ million big game) can become available by the year 2000 by elimination of refuges and closures.

Fishing

98% of the fishing in California National Forest waters is for the so-called cold water species - trout and its relatives. Shasta Lake furnishes some fishing for black bass. Some San Diego County waters also furnish black bass, bluegill, and crappie, but most of this is on City of San Diego waters and lands. As with hunting, user estimates on the fisherman use of National Forest waters is not reliable as to total numbers. However, observation and statistics of other agencies indicate that the trend from 1950-1959 is correct. It conforms with fishing licenses sold and other significant data. The record of fisherman use in visits for the 1950-1959 period follows:

1959	1,976,134
1958	1,940,610
1957	1,864,785
1956	1,438,355
1955	1,311,085
1954	1,073,506
1953	947,266
1952	956,640
1951	692,630
1950	586,570

Of the total fresh water fishing effort in California the best estimates point to about 25% to 30% on National Forest waters. The Department of Fish and Game indicates between 6 and 8 million visits for fresh water fish in the state.

The quality of fishing in terms of success per angler, competition, isolation, and water quality has declined since 1950, yet the fishing effort has increased.

Southern California waters generally are well below the quality of fishing waters in the Sierra. Perhaps the highest quality is in the coastal streams and their tributaries. In the most heavily used fishing waters such as in southern California, the Inyo and parts of the Sierra range, the State has resorted to "put and take" fish management techniques. In this program the Department of Fish and Game plant catachable size fish as needed to meet a success ratio of about .2 fish per fisherman hour. Some southern California streams are so stocked (and fished) until the stream dries up in summer or until water temperatures rise above safe levels for fish.

In the coastal streams which support and produce anadromous fishes such as steelhead, salmon, and cutthroat trout, stocking is confined to taking "eggs" and returning "fry" to the streams in time to make their trip to the sea. However, this fishery has been declining and can be expected to decline further (or be replaced) as water developments occur on these waters.

Lake fishing, along with the expansion of the boating activity, has become more and more popular and absorbs some of the increase in pressure on streams. For the most part all lakes in the National Forest areas are stocked with cold water fish. Shasta Lake however has black bass in addition to Kokanee and Lake Pend Orielle trout.

Some rivers such as the North Fork Feather have been changed so drastically by power diversion dams that the ecology of the streams no longer favor trout. At one time it was one of the finest trout streams in the state. This situation can be expected on other national forest streams, notably the Middle Fork of the Feather and the McCloud. Fishery study may indicate a change on such streams to fishes more suitable to the new ecological regimen of the stream, such as black bass or other so-called warm water fish.

A general picture of the fishery in California for trout and its relatives is found in the report of the California Recreation Plan. These remarks apply to national forest waters.

"According to 1957 figures, California currently has about 1,100,000 trout anglers, including both licensed and unlicensed anglers (youths under 16 years of age, pensioners, disabled veterans, and a few other legally exempted groups). At the present rate of population increase, the number of trout anglers could reach 2,225,000 by 1980.

"Some trout anglers fish for the migratory juvenile steelhead trout, but the majority seek the resident species - rainbow, brown, brook, interior cutthroat, golden, and lake trout. California anglers take an estimated 19,000,000 trout annually. It is estimated that about two-thirds of these fish are wild trout, and about one-third are the product of state fish hatcheries.

"Trout angling in California is accessible to all age groups. Most Californians can reach trout water within a few hours' drive, while an additional day or two of riding or hiking brings them to remote wilderness trout-fishing areas.

"Most back country streams and some back country lakes, where fishing is moderate, maintain self-sustaining trout populations. Many of these waters have a recreational potential higher than that indicated by present use. On the other hand, some back country lakes and virtually all roadside waters are already heavily utilized. To meet the demands, the state plants about 7,500,000 catchable-size trout and about 13,000,000 fingerlings annually.

"While most of the reservoirs envisioned in the California Water Plan will be more suitagle for warmwater species, some will be in areas where water temperatures and other conditions should be suitable for trout. At present, there are in the state an estimated 29 coldwater reservoirs that have over 100 surface acres each. By 1980, a total of 47 are expected, with an aggregate surface acreage of 66,000 acres.

"Salmon and steelhead provide recreational fishing of a high quality in most of the coastal rivers and streams of central and northern California and in the river systems of the Central Valley. Salmon also provide a major ocean fishery off the central and northern California coasts.

"In 1957 there were approximately 115,000 anglers who fished for salmon in the ocean, and 60,000 who fished for them in rivers and streams. About 95,000 anglers fished for steelhead. Ocean salmon fishing provides an estimated 550,000 days of fishing. River salmon fishing provides about 440,000 days, and steelhead fishing provides about 700,000 days. On the heavily fished Sacramento River anglers now take about 30 percent of its annual steelhead run. This is believed to be near the maximum that can safely be taken there. Similar figures are not available for coastal steelhead runs or for salmon, but the percent of harvest is believed to be somewhat lower."

The NFRS lists 101,599 water acres of fishing lakes and streams now available for fishing on national forests. Under the state water development program this can be increased by 39,483 acres of new water surface by the year 2000.

Hiking and Riding Areas

Hiking and riding is practiced forest-wide on all forests except during parts of the year on some forests because of fire closure.

There are no areas in the region specifically classified as riding and hiking areas. There is a need for such a classification and specifications to direct management in such areas.

The NFRS lists a need for 136,592 acres in a riding and hiking classification in locations outside of other classified areas adjacent to communities and recreational centers.

Statistics on use of the national forests for hiking and riding are forest-wide and are not confined to the kinds of areas that should be specifically classified or set up as management units. The reported use in 1959 was 447,803 visits mostly of less than a day. This is an increase of 292,158 visits from the 1950 report of 155,645 visits.

Generally riding and hiking is increasing statewide. Ownership of horses and membership in riding clubs is also increasing according to state figures.

A state system of riding and hiking trails is gradually being developed with state funds. A large portion of this is in the national forests. Such areas need more attention in management than has heretofore been forthcoming, both from the standpoint of trail location and from the standpoint of facilities and services on the trail system, i.e. camps, corrals.

Wilderness Type Areas

This dispersed area use class includes all areas presently classified as wild, wilderness and primitive. The NFRS total for wilderness type classification is 1,610,625 acres net national forest land. The 1959 form 446-U1 report lists 1,638,227 acres including private land inside. Other listings quote figures as high as 1,647,862 acres gross. A recent report prepared for the ORRRC using listed acreages from earlier reports show a net area of 1,521,384 acres. This is 89,241 acres less than the NFRS survey. It should be noted that in preparing the report for the ORRRC it was necessary to subtract from our data, a considerable acreage to meet the revised March 1960 listed acreages.

The NFRS figures were compiled from the most recent maps believed to be within reasonable limits of accuracy. This points to the need to bring listed acreages of classified areas up to date with latest compilations. This might be done when NFRS data is released for public information.

Wilderness type areas in the California Region range in quality, according to NFRS criteria, form near superlative to fair. In one or two cases a fair rating is generous. Broken down into quality classes the established areas are rated about as follows:

Outstanding	66.6%
Good	19.0%
Fair	14.4%

Use of wilderness by wilderness areas, varies from as light as 35 acres per visitor day to as high as 1 acre per visitor day. In the heavily used wilderness units, use varies as much within the unit itself. In some areas such as Desolation Valley with an overall intensity of 1 acre per visitor day, 75% of the use is on about 10% of the area; this along the perimeter. This leads us to believe that to truly assess wilderness use and its values we need to zone each in accordance with the intensity of the use of its various parts. We may find that a large part of our wilderness is actually used very lightly. We can then determine how much of our wilderness has the isolation qualities we think should be a part of wilderness, what parts need intensive management and where use can be dispersed.

The recorded wilderness use for the period 1950-1959 is as follows:

Year	Visits	Visitor Days	Visits, Wilderness Travel
1959	179,150	530,063	119,847
1958	192,230	574,750	116,510
1957	180,530	542,823	100,051
1956	153,474	440,551	77,319
1955	179,699	413,276	37,407
1954	164,037	379,349	28,406
1953	180,219	684,993	24,734
1952	157,341	411,293	30,184
1951	106,146	335,854	25,930
1950	62,333	223,575	21,471

We do not know just how reliable or unreliable these figures are. We believe that a large part of the variation from year to year is due to differences in reporting. Some may be due to weather. There is no question that use is increasing but the reported figures from 1953 to 1959 would not indicate this.

The deterioration of condition of wilderness areas due to use is quite marked in many areas. However this deterioration is found mainly along time honored routes and locations and in the more accessible sections where use is heaviest. The deterioration is mainly in or near camping areas and is due not only to heavy use but uneducated use and carelessness. A great deal of attention is needed in providing sanitation and

cleanup in heavily used areas. A great deal more attention is needed in education of the wilderness users.

Wilderness concepts are discussed further under section IV of this report.

Scenic and Virgin Areas

The National Forest Recreation Survey lists a total net area of 36,672 areas in virgin areas and 17,216 acres in scenic areas on the National Forests of the Region. Some 5,540 acres classified as scenic areas in the inventory are lands under permit to the State Division of Beaches and Parks and are managed by that agency in conjunction with park properties. Parts of these areas are developed but most of the lands are undeveloped and are more nearly scenic in their contribution to recreation use. Squaw Valley and Burney Falls areas have developments on them - a campground at Burney Falls and winter sports improvements at Squaw Valley. It was decided to not list these as use classes in order to avoid the problem of duplication in agency reports.

The quality of scenic areas is generally very high except for some buffer type lands included in the areas. The bulk of the land is excellent and in good condition.

No use figures are presently available for scenic and virgin areas.

Other Unusual Interest Areas

This group of classified areas includes Geological, Archeological and Historical areas. A total of 238 acres is so classified as follows:

Geological	231 acres
Archeological	1 acre
Historical	6 acres

This is only a fraction of the area that should be classified in the special interest group. No use figures are available for these.

C. Cooperative Arrangements with Other Agencies

There are many cooperative relationships and arrangements with other agencies for developing and managing recreation resources in the National Forests. A few involve development of occupancy sites.

The Region works very closely with the California Department of Fish and Game in game and fish management. Law enforcement is a well worked out cooperative effort with most permanent field personnel holding deputy game warden appointments. In habitat improvement for fish and game, managers in the department work closely with the forests on a local level and the region on a regionwide level.

The Federal Fish and Wildlife Service, the State Department of Fish and Game and the State Department of Water Resources and the Region, locally and regionwide work closely on water releases from reservoirs for fish and recreation maintenance or improvement. The regional practice now is to establish consultation and joint field inspection of each water project. This leads to unanimity in making water release demands on water development agencies.

The California Wildlife Conservation Board

This is a state agency which directs the expenditures of a number of funds allocated to fish and wildlife development. Some of the funds which they participate in allocating and expending through contracts are parimutual funds allocated to the State and County Fish and Game "fine" moneys allocated to joint wildlife projects.

Many WCB projects are on the National Forests. Many small projects have been completed on National Forest lands and many more are under way or in the planning stages, perhaps 50 or more.

WCB projects are primarily for habitat development, improvement or maintenance for fish or game and for development of access for hunters or fishermen. Some examples of work done through this agency are:

1. Road or trail access to hungint and fishing areas, including parking areas.

2. Construction of reservoirs or ponds for fish or game.

3. Improvement of lakes and reservoirs.

   A. Raising levels.
   B. Clearing
   C. Access development

4. Browseway development for deer and small game

5. Wildlife water development such as springs and quail guzzlers.

6. Boat ramps.

Not included in WCB programs are occupancy improvements such as camp and picnic areas. Under the program such facilities are arranged for under cooperative programs with agencies such as the Forest Service, counties, etc.

Recreation and Water Development Agencies

Recreation use in the California Region, as elsewhere, will orient to water whenever, wherever, and if water is available. Probably the

most significant factor that will alter normal recreation trends in total or from one area to another is the development of new water areas by the construction of reservoirs. Related to this and almost as significant in importance is the improvement of stream flows as the result of water development.

The NFRS indicates over 58,000 acres of new water area on the National Forests of the Region. This figure only includes known projects on the drawing boards, as to speak. In the total water development of the State by the year 2000 there will be many more areas to be added to the above known figure. It is not possible to predict accurately at this time just what reservoirs will be built, who will build them or when. It is not even possible at this time to say how many different agencies in California are or will be in the business of constructing water facilities. While there are areas of interest there is a great deal of overlap in most areas between consumptive and noncomsumptive water using agencies.

The most comprehensive work on the water resources of California and their development is the California Water Plan. This plan was presented to the Legislature in 1957 and has been accepted as the official plan of the State.

A 1-3/4 billion bond issue has been passed by the people of California at the last election to implement the part of the water plan proposed for state development. This bond issue will provide for the development of the Feather River Project and the distribution of water to San Joaquin Valley and southern California. Much preliminary work has been done on this project, including development of upstream storage for recreation and flow maintenance on the Plumas.

The Director of the Department of Water Resources in his letter transmitting the water plan to the Governor and the Legislature, dated May 6, 1957, has this to say:

> "Bulletin No. 3 presents a master plan to guide and coordinate the activities of all agencies in the planning, construction, and operation of works required for the control, development, protection, conservation, distribution, and utilization of California's water resources for the benefit of all areas of the state and for all beneficial purposes.
>
> "It is believed that the California Water Plan provides the basis for achieving the most effective and comprehensive development of California's water resources. It is concluded that California does have enough water, including the State's present rights in and to the waters of the Colorado River, to satisfy the ultimate water needs if the available resources are wisely controlled, conserved and distributed."

The plan is further described in the body of the report, page 37, as follows:

"The California Water Plan is a master plan for the control, conservation, protection, and distribution of the waters of California, to meet present and future needs for all beneficial uses and purposes in all areas of the State to the maximum feasible extent. It is a comprehensive plan which would reach from border to border both in its constructed works and its effects. The plan is a flexible pattern susceptible to orderly development by logical progressive stages, the choice of each successive incremental project to be made with due consideration to the economic and other pertinent factors governing the particular time."

This water plan lists all of the logical development possibilities that could be developed to utilize all of the State's waters. The listed works are not project proposals. The plan includes many alternatives and so includes more project works than necessary to develop the water the State needs. We have no way of knowing which of the alternatives will be developed, by whom, or when, until these projects come up as proposals by some agency.

The water plan gives considerable recognition to the recreational phases of water development. The following are quotations from Bulletin 3, which is the Water Plan:

"Problems of Recreation, Fish and Wildlife (p. 21)
The need for more or better opportunities for wholesome outdoor recreation in California is rapidly expanding... Accessible water areas and flowing streams, well stocked with fish, constitute an important aspect of the public desire for recreation opportunities. Satisfaction of that desire for recreation opportunities. Satisfaction of that desire to the maximum feasible extent is a problem inherent in the development of California's water resources. That development will provide several hundred new reservoirs with many thousands of acres of water area and will make possible releases of water in hundreds of miles of natural streams for improvement of fish and wildlife habitat. Enhancement of fish and wildlife resources and development of the recreational potential will provide important economic assets to many areas in California, particularly in the mountains and foothills. Provisions of facilities and opportunities for such use by the public therefore becomes an important objective in further water development."

"Recreation, Fish, and Wildlife (p. 31)
Outdoor recreation and fish and wildlife conservation are essential considerations in planning for water resource development. When reservoir storage is contemplated in streams with recreational potential, sufficient reservoir releases must be planned to maintain favorable downstream

conditions for recreational pursuits and propagation of fish life. Planning of major dams which would block passage of migratory fishes to their ancestral spawning grounds requires concurrent planning of fish ladders, substitute fish hatcheries, or spawning ground development of other streams solely for fish life. . . Planning for recreational purposes also involves the contemplated operation of reservoirs dedicated solely to the improvement of summer stream flow conditions in popular recreational areas where such flows are presently deficient.

"At the time of acquisition of lands, easements, and rights of way for reservoirs and other water development works, additional lands should be included for public access and for development and use of recreational opportunities. Likewise, at the time water resource development planning is done, planning by those state, federal, and local agencies responsible for associated recreational opportunities should be accomplished."

"Water Development for Fish and Wildlife and for Recreational Use.
In order to provide sufficient flowing water in a stream for fish and wildlife and for the enhancement of recreational aspects of a stream, it may be necessary to store water in a headwater reservoir to permit planned releases during low water periods. The combined releases and natural flows would be planned for a desirable all-year regimen of flow in the interests of protection and enhancement of fish, wildlife, and recreation."

"Recommendations (p. 245)
#11. Study be initiated now of the additional legislation that will be necessary for the progressive implementation of the California Water Plan and that such legislation be enacted when and as required. This includes policy recognition of the interests of recreation, fish and wildlife as important and necessary factors in water development, and the maintenance of live streamflow in the interest of fish, wildlife, and recreation as a beneficial use of water..."

To plan and construct recreational facilities on reservoir projects on national forest land concurrently with the project construction, so that facilities will be available when needed, poses problems of a policy and financial nature. To meet the needs for development requires joint participation by all agencies involved if the costs are to be met and the work done.

Within the National Forests we recognize our responsibility to plan and manage National Forest land. As a result, such developments as the Sacramento Municipal Utility District project on the Eldorado (power) have been negotiated and jointly planned for recreation use

in order to coordinate the development and operation of government land with project properties. These are lengthy negotiations involving public rights-of-way, land exchange, acquisition by the project authority, etc.

In other cases such as the Trinity Reservoir being constructed by the Bureau of Reclamation the Forest Service has prepared development plans with cooperative funds furnished by the Bureau out of project funds. Funds may or may not be forthcoming from the Bureau for development.

In the Upper Feather River Project on the Plumas, a State Department of Water Resources project, the State is preparing recreation development plans on both National Forest and project properites with our advice and guidance. Our intent was to plan development of the National Forest land ourselves but lack of planning personnel prevented us doing this. However, the State has agreed to plan according to our standards, submit the plans for our approval, use our standards in making recreation improvements, and turn title to them over to the Forest Service if we will operate and maintain them. There has not been time enough to complete one of these projects. The first project Frenchman Creek Reservoir is under construction and is scheduled for completion by July 1961.

Projects in the State Water Plan, public utility plans, district plans and others will be continually coming up in the future. If the recreation public is to be served we must continue to negotiate for acquisition of key areas by the project authority, and negotiate exchanges as necessary to provide public use areas and rights-of-way. However, in order to fulfill our responsibilities, we should be prepared to do all of the planning on National Forest land at our expense. We should negotiate for and feel free to accept costs of recreation development for the first five or ten years of public use from the project authority as their recognition of the multiple use of water principle and as part of their obligation for the use of national forest waters. Acceptance of this principle would, in the case of power reservoirs, require some change in outlook on the part of the Federal Power Commission.

The principle that the project authority should develop or finance the construction of initial recreation facilities on project land or other public land is becoming more and more widely accepted. Whatever contribution toward the total job of recreation on the National Forests reservoir development agencies can make will further the total job. This is in the public interest. However, it is the proper function of the Forest Service to plan the use and development of national forest land. It is our responsibility and we should not look to any other agency to assume any part of it. Once planned and developed such areas should be operated and managed under the same policies and to the same standards as any other national forest recreational area.

During 1960, the Pacific Gas and Electric Company embarked on a planning program preliminary to developing their extensive holdings for recreation. We are assisting them and look to development of coordinated plans wherever National Forest lands are involved with project areas.

Recreation Development by Cities and Counties

289 recreation agencies employing year-round recreation administrators under the jurisdiction of cities, counties, schools or special districts serve the recreation needs of the people of California within their jurisdiction. Of the 351 incorporated cities in the State, 225 conducted recreation programs during 1958. 19 of California's 58 counties presently have some form of recreation and/or park agency established as a branch of the county government. Others are being added to this list each year.

Statistical data is not available to determine how much and what area under city, county, or district jurisdiction is concerned with non-urban type of recreation service such as camp and picnic areas. A number of the larger cities and some counties maintain family type camps in the mountains, either on their own land or on National Forest land. However, the trend in city and county recreation programs is toward day use in or close to urban areas. There has been little significant expansion of overnight or family camp facilities of the traditional type in recent years. However, significant trends manifest themselves in the development and operation of recreation facilities in connection with water oriented recreation on newly constructed reservoirs and impoundments. Statistics are not available on the full extent of activities of this nature.

All combinations of cooperation in capital investment for and operation of recreation improvements by counties and special districts with reservoir construction agencies is evident. The trend outside the National Forests is toward counties assuming the obligation of operating recreation facilities either constructed by the county or by the agency constructing the water facility. Most such developments are self-supporting through a charge system.

In years past, the County of Los Angeles developed areas for day and overnight use on the Angeles National Forest. A number of years ago these areas were turned over to the Angeles National Forest for continued development and operation. A contribution of $60,000 is made by the County each year to the Angeles under cooperative procedures for the maintenance of these areas.

In all counties but Los Angeles the trend is toward development of areas close to the point of origin of people rather than in the distant mountains; however, increasing interest is evident in the development of National Forest areas not with the desire to spend local funds, but to encourage development by the National Forest. Planning agencies show an increasing interest in what is done on National Forest lands as related to proposed county programs.

The pressure for day use areas in Los Angeles forces that County to look further afield than other counties for development area, even to the extent of going outside the county.

From time to time County Supervisors in Los Angeles County suggest developing National Forest lands by the county when the questions of need arise. Usually this is due to a reluctance to take additional land off the tax rolls.

Suffice to say that perhaps with the exception of Los Angeles County, the counties and local jurisdictions have all they can do to keep up with the needs for local close-in recreation facilities.

In the case of the Los Angeles complex, continued close liaison with planning and recreation agencies is in order. The available area on the National Forest is limited and it is essential that these agencies look toward acquiring private lands in strategic areas before they are irrevocably lost to public use. However, the Forest Service should be ready and willing to accept cooperative funds for the operation of key areas where they are needed for the local population if they are needed to a greater extent or sooner than an equitable distribution of National Forest appropriations will permit. It is preferable, however, if development can be done by the Forest Service and limit cooperation to operation and maintenance.

The most useful way counties can relieve pressure on the National Forests without taking over National Forest areas is to develop new areas outside the Forest and near communities primarily for day use for local people.

Actual expenditures for recreation and park areas during fiscal year 1957-58 by city and county agencies amounts to $83,339,307. Over $20,000,000 of this was by the County of Los Angeles alone. The 1955-56 expenditure was $52,040,186. This includes, of course, urban recreation.

The trend toward increased recreation services on a local level continues. Figures are not available for 1959-60 except that they are reportedly greater than the preceding year.

Data is not available on the proportion of these expenditures used for non-urban type recreation.

2. Kinds of Recreation Provided by Other Agencies

In general, outdoor recreation on the national forests differs markedly from that furnished by other agencies.

Cities and counties concentrate on occupancy development for day use with little significant development for overnight use. Area type recreation opportunity is limited to local parks. In recent years some occupancy type development has been made in conjunction with water development.

In Southern California a number of state and county beaches have been developed by cities and counties. Development of scenic areas, riding and hiking areas and hunting areas is almost non-existent in mountain areas. A number of "public shooting" areas are provided in the central valleys for pheasants and waterfowl by the Department of Fish and Game, and the Fish and Wildlife Service. State agencies, principally the Division of Beaches and Parks, have concentrated on preservation of outstanding areas such as the redwood groves, historical sites, and beaches. More recently Squaw Valley was turned over to the division as a park under the provisions of the term permit issued to the State of California for the site of the VIII Olympic Winter Games.

Generally the State provides occupancy development in conjunction with these parks, beaches, and historical sites. No hunting is permitted in parks. In the last few years the State has been developing a system of State Riding and Hiking Trails, much of which is on the national forests. The State itself does not contemplate development of camps, corrals or rests along the State trails, leaving these to other agencies with available land.

Water development agencies, private and public, have only recently entered the recreation picture. Primarily the activity here is in the direction of commercial facilities and some camp and picnic areas, concessionaire operated, in connection with water impoundment.

Park Service development needs no further discussion here except that in the one non-park area in which they were given an interest (Folsom Reservoir) they have arranged with the State to operate the area.

Primarily the Park Service furnishes scenic areas with occupancy facilities related to these. Recently the Park Service has been recommending for park acquisition and development proposed National Recreation Areas such as Point Reyes north of San Francisco. In this instance they approve grazing leases on part of the lands, but will probably prohibit hunting. In addition a Parkway has been under consideration from San Francisco to San Luis Obispo, which would pass through the Los Padres "Pacific Beach" area.

The Department of Fish and Game and the Fish and Wildlife Service are developing an expanded public shooting area program directed primarily at migratory birds and pheasants. No occupancy development is provided in these public shooting areas.

In some instances large land holders such as lumber companies offer areas for hunting under a permit system. This practice is expected to expand to some degree. However, the growing practice of forming hunting clubs for using private lands and tying them up for special groups at a price indemnifying the land owner and providing a small income is expected to extend to lumber company holdings. To date no occupancy type development has been considered seriously in this activity.

Of all agencies, only the National Forests offer the full range of outdoor recreation opportunity, including hunting, summer homes, and such. In the future the National Forests will offer the only major public hunting areas for big game in the State.

All agencies, state, local, and private who offer recreation opportunities in California charge for the use. In some cases such as State beaches, a charge is made for car parking only. In a few others where use is too light to be significant, no charge is made, although overnight camping is prohibited. The state intends charging on these areas too, when use and development warrants.

Naturally private developments such as utility companies, lean to concessionaire type of operation. In a few areas resorts are leased on utility company lands usually at a few higher than that charged by the Forest Service.

For example, resort on P G & E land at Lake Pillsbury charges 3% of gross income with a $500 minimum.

A resort bid accepted on P G & E land at Gold Lake on the Plumas was for 4% of gross income with a $600 minimum.

These are typical examples. Fees charged for summer homes on utility company land are generally set at rates comparable to those established on nearby national forest land.

In contrast to "low density" development on national forest lands (3 to 4 family units per acre for camp and picnic areas), developments by cities, counties, and many state areas are developed to a high density level, sometimes as high as 12 units per acre for picnic areas and even higher for house trailer facilities. Similarly, concessionaire developments are of a high density type.

Non-concessionaire state park developments for camping in forest environments are only slightly more dense than national forest standards. They average between 4 and 5 units per acre. They report about the same size of party on the average, i.e., 3.7. Size of party for house trailer parties, statewide, average 2.3 per trailer unit.

D. Trends in Recreation Use of the National Forests

Recreation use of the National Forests of the California Region as reported in the annual recreation visitors report has shown a strong and steady increase since 1950.

From 1950 to 1959 the increase in the eight occupancy development classes reported on form 446 in visitor days was over 130%. The average annual increase for the nine-year period was over 10%. There is no indication that this rate of increase will diminish in the foreseeable future. This increase might have been considerably greater if adequate facilities had been available for all who wanted to use developed forest land.

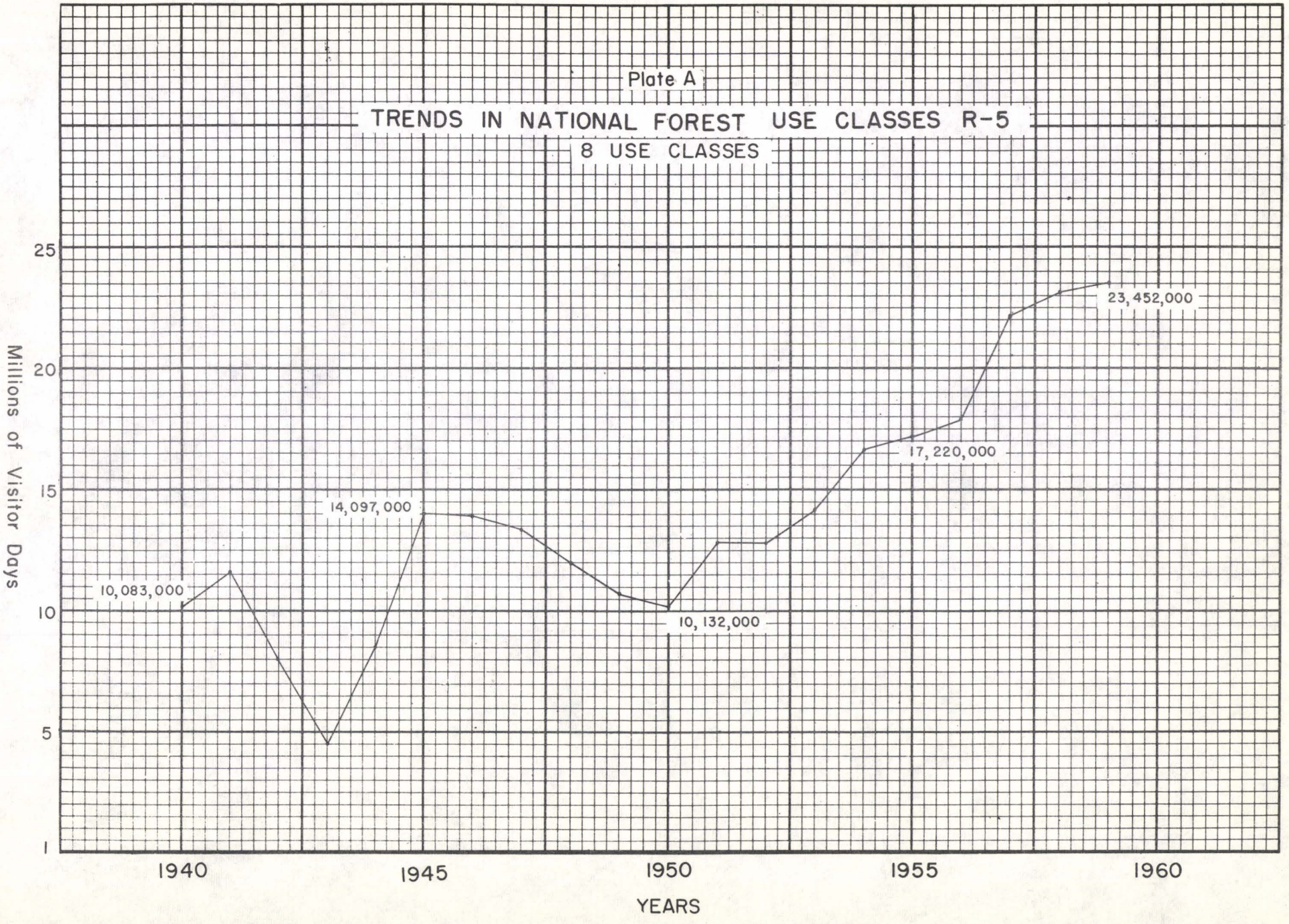


Plate A
TRENDS IN NATIONAL FOREST USE CLASSES R-5
8 USE CLASSES
Millions of Visitor Days
25
20
15
10
5
1
10,083,000
14,097,000
10,132,000
17,220,000
23,452,000
1940
1945
1950
1955
1960
YEARS

TRENDS IN NATIONAL FOREST USE
Winter Sports, Camping and Picnicking
Plate B
Winter Sports Millions of Visitor Days
Picnic - Camping Millions of Visitor Days
2
0.5
0
10
9
8
7
6
5
4
3
2
1
0
601,000
179,000
406,000
1,302,000
1,344,000
2,805,000
3,510,000
4,641,000
6,814,000
9,121,000
8,621,000
1940
1945
1950
1955
1960
YEARS

During the period 1940 to 1950 use in the eight use classes declined to a low in 1943 during the war years and peaked in 1945, the terminal year of the war. Thereafter until 1950 the use declined at which point the general upward trend developed. (See Tables I and II and Plate A). The net increase for the 1940-1959 period as reported in visitor day use is 134%.

It is interesting to note that during the period, 1945 to 1950, the camp and picnic ground use and winter sports increased slowly while total use declined. We attribute this to the fact that camp and picnic areas were in short supply even during that period and regardless of what the total use was, camp and picnic areas were used to capacity. People preferred to use developed areas, if they were available. (See Plate B).

These figures are regionwide totals and should be fairly reliable as to trends even though there are changes in reporting procedure and estimating techniques on individual forests. The trends are confirmed by general observation and by the results reported in other surveys such as have been conducted by state and county agencies.

Many factors affect the individual reports of ranger districts and forests such as changes in administration, changes in reporting procedure, boundary changes and so on. However, these factors tend to compensate in regional totals. Increased recognition of the importance of recreation use reports since 1940 should increase the reliability of forest reports to some degree.

Reported use is tabulated on Table I for visits and visitor days for the 8 use classes of form 446 and the NFRS. Table II lists visitor day use as reported for several use classes and the total for the eight classes. Estimating the relationship of visits to visitor days varies somewhat from forest to forest and district to district. In some instances use counts are made in visits and converted to visitor days by the best information available, in others the reverse is the practice. In many locations sampling methods have been used to obtain the relationship of visits to visitor days. We believe the best measure of impact is visitor days, it being a common denominator with which we can compare uses. It is the best factor so far developed for measuring work load. In the future it may be desirable to use two factors, day use in terms of visits and overnight use in terms of man days.

Table I listing the average length of stay shows a significant increase from 1940 to 1945 which is quite understandable because of gas rationing and travel restrictions during the war. Since 1945, however, length of stay has decreased gradually, with some variations to 1959 where the lowest average is recorded, 1.75 days per visit.

This trend seems to be the result of increased mobility due to improved transportation facilities (highways, automobiles, etc.) and to a trend toward tourism (keeping on the move to new places). It

may also be affected by higher concentrations of people in certain urban centers near to the national forests where one and two day trips are feasible (Los Angeles, San Diego, Fresno, Sacramento, etc.). If projected as a curve this would show an even shorter length of stay by the year 2000.

However, we did not use a projection method for determining length of stay in the future on a regionwide basis. NFRS calculations for this purpose were made district by district and use by use. The results show a tendency toward a slightly longer length of stay on the average, regionwide. Summarized, this came to 2.01 days in 1966, and 2.24 days in the years 1976 and 2000 respectively. We believe this is realistic since the future will see development and use increase in more remote areas where use is now light. All indications point to the fact that the more remote the area, the longer the length of stay. In the case of campgrounds this is borne out by state and other studies in areas where reliable information could be developed.

In the case of six National Forest concessionaire campgrounds where this information was tabulated, individual user data for the calendar year 1959 taken from receipts were processed through tabulating machines. State tabulations for State Park areas correlated well with findings on national forest camps. The following data was determined for six national forest camps:--

Involving a total sample of 13,961 camping parties, 54,697 people (visits) and 180,039 visitor days of use.....

Nevada Beach (Toiyabe R-4)	
Highway U.S. 50 on Lake Tahoe	
Average length of stay (campers)	2.15 days*
Average size party (campers)	3.64 people
Antlers Camp	
Highway U.S. 99, Shasta Lake	
Average length of stay	2.3 days*
average size party	4.5 people
Lakeshore, Shasta Lake	
Average length of stay	3.93 days
Average size party	3.77 people
Pinecrest, Stanislaus	
Average length of stay	5.57 days
Average size party	3.67 people
Strawberry Flats, San Bernardino	
Average length of stay	2.20 days
Average size party	3.7 people

Big Green Valley, San Bernardino	
Average length of stay	2.19 days
Average size party	3.86 people

In applying visit to visitor day ratios there is need to recognize that average length of stay tends to be shorter in transient areas (along through highway routes) and longer in terminal or destination areas. Many ranger districts can be classified as transient or destination on this basis.

*A large proportion of use here was overnight stops while passing through on Highway U.S. 50. A similar situation prevailed at Antlers on Highway U.S. 99.

The conclusion to be drawn from overall use trends is that we can expect an increase of at least 10% per year in visitor day use and probably as much as 11% if facilities are provided and length of stay ratios increase on the average as expected. Projections bear this out since the increase of 184.52 million visitor days by the year 2000 over the use in 1959 amounts to a total percentage increase of 786.7%, almost 8 times the use we now have. The annual increase indicated from the projections is about 11% per year for the eight use classes.

Projections have been made in the individual use classes for the purpose of determining the area needs for each class of use. The curves derived from past use are not true projections of demand in all cases, but they are indicators. Generally the curves project past experience into the future but past experience is influenced, seriously, in some classes of use by past policies and lack of the means to develop sufficient facilities to allow demand to establish its own level. In an attempt to see what the effect policies and financial limitations have had on the various uses, Table III and Chart C were developed.

We have used two key years in the diagrams taken from Table III, based on visits in the eight use classes, 1941 and 1959, and two projected years 1976 and 2000. 1941 was a pre-war year when development facilities were near balance with need, in general. 1959 is our last year for which we have data and represents a year in which the supply of facilities is significantly out of balance with demand. It is a year of rapidly increasing demand as well.

The "pie" diagrams, plate C, show that of our use in 1941 almost 80% was on developed national forest land and 20% on undeveloped land. Almost 2/3 was in the three use classes, camping, picnicking and winter sports.

By 1959, increased use without a concurrent increase in developed facilities becomes evident in the pie charts, in that over 1/2 of the total use was on undeveloped National Forest land. Camping,

picnicking and winter sports account for only 40% of the total use. While these percentages represent a lot more people they do not mean that people have changed their desires. Since developed facilities have not increased with the demand, people are picnicking, camping and playing in the snow on undeveloped land. Also, fishermen, hunters, etc. are staying elsewhere than on developed National Forests as their base of operations. Projections to 1976 indicate that this use ratio will be more like that of 1941 if improved facilities become more in balance with demand. One reason for this may be that in making projections it is assumed that we will provide the facilities needed. If we do not, the use of undeveloped land will be greater in proportion to that on developed land. By the year 2000 other forest use again increases in proportion to developed area use. This is logical because, by then, most high quality private land in and near the forest will be developed and National Forest land will be about the only "open" land for people to use for general forest activities.

It is interesting to note that wilderness use, as projected, will remain in about the same proportion as it is now but this still represents a tremendous increase in visitor day use. Organization Use and Hotel-Resort Use will continue in about the same proportion as now but recreation residence use decreases in proportion. This is due to the low management priority given residence use and a reluctance to make lands available for it at the expense of other uses in the past. This is reflected in the projections. Hotel and Resort use remains the same proportionately as it includes much of the service facilities needed for all users.

The trend in numbers in the purpose of visits to National Forest land from 1940 to 1959 parallels somewhat the trend in the occupancy classes of use.

The following table (Table IV) indicates the trend in several purpose of visit categories as reported:

TABLE IV
Purpose of Visit
Thousand Visits by Years

Purpose	1940	1946	1950	1955	1959	% Increase Since 1950
Hunting	350.5	309.2	317.1	692.1	930.2	193
Fishing	755.6	684.4	586.6	1311.1	1976.1	237
Boating		14.9	22.6	75.5	329.5	1355
Swimming		154.2	143.5	325.5	536.7	273
Other	282.1	148.2	191.2	292.7	808.6	323
Total	1388.2	1310.9	1261.0	2696.9	4581.1	263

TABLE III

Visits to the National Forests R-5

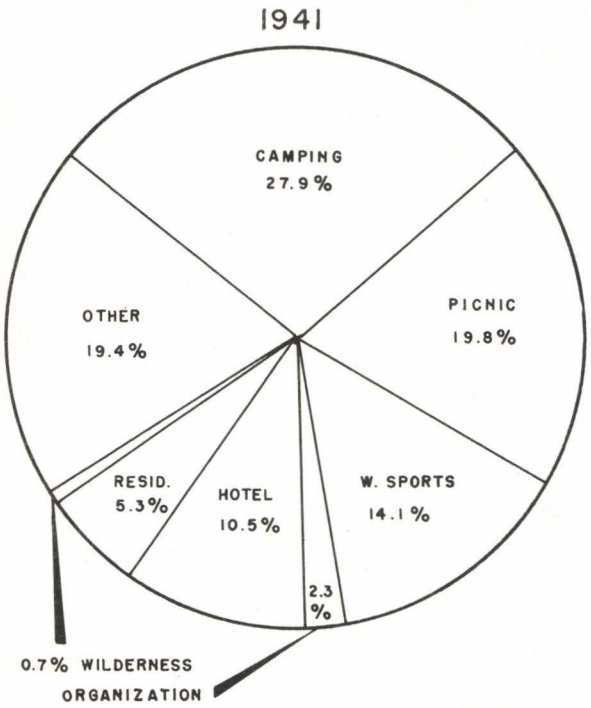
1941 - 2000

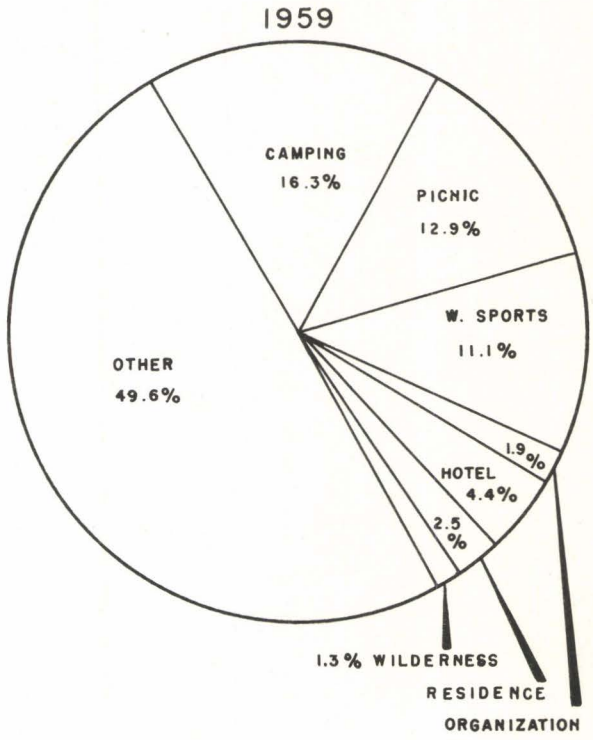
Class of use	Thousands of Visits and % of Total											
	1941		1951		1959		1966		1976		2000	
	Visits	%	Visits	%	Visits	%	Visits	%	Visits	%	Visits	%
Camping	1313	27.9	1071	26.9	2204	16.3	3693	18.9	9896	28.1	24793	26.6
Picnicking	932	19.8	615	15.5	1735	12.9	2905	14.8	5980	17.0	13940	15.0
Winter Sports	664	14.1	435	10.9	1509	11.1	1908	9.8	5700	16.2	11400	12.2
Organization	109	2.3	146	3.7	259	1.9	361	1.8	575	1.6	1460	1.6
Hotel & Resort	495	10.5	217	5.5	601	4.4	1039	5.3	1950	5.5	4860	5.2
Rec. Residence	250	5.3	271	6.8	343	2.5	528	2.7	788	2.2	1703	1.8
Wilderness	34	0.7	106	2.7	179	1.3	306	1.6	490	1.4	1470	1.6
Other	914	19.4	1115	28.0	6727	49.6	8809	45.1	9876	28.0	33472	36.0
TOTAL	4711	100	3976	100	13557	100	19549	100	35255	100	93098	100

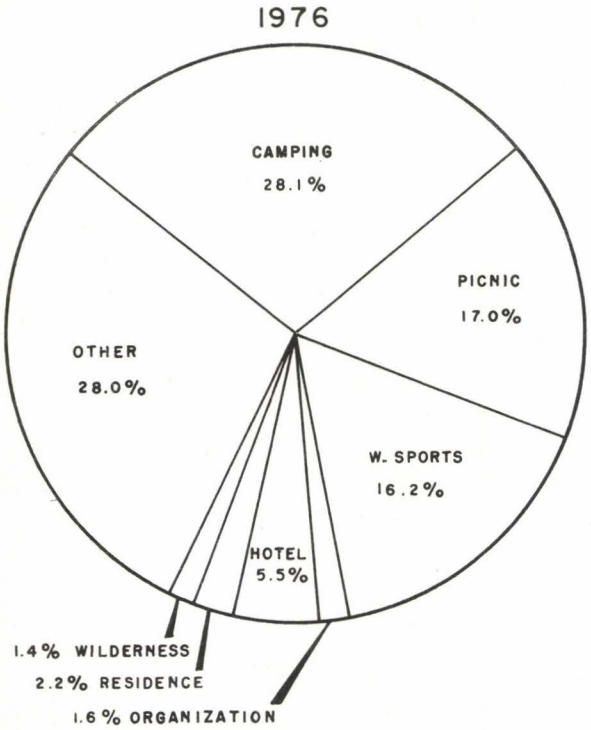
PLATE C

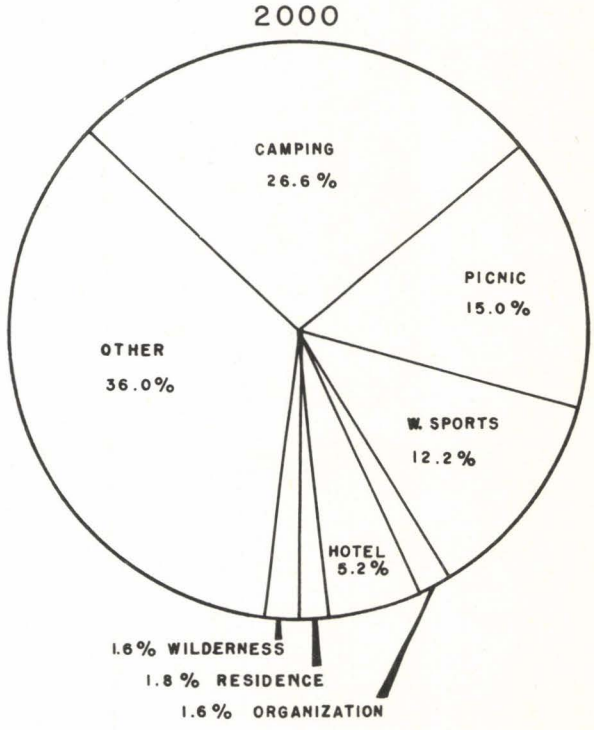
RECREATION USE OF THE NATIONAL FORESTS, R-5

PERCENT OF VISITS









The years 1946 and 1959 were used in the tabulation rather than 1945 and 1960, as there were no records available in these categories for these 5-year interval years.

The indicated trend for the total in the several selected use classes was downward until 1950 when the general uptrend began. Were it not for a reported use in swimming in 1946, a low point would probably have been indicated in 1945 and 1946, as was the case with occupancy use classes. The trends overall tend to follow the same pattern.

The increase from 1940 to 1959 for these uses is 231% while the increase in the eight classes of occupancy use for this same period was 189% on the basis of visits. This difference in increase is probably due to the high proportion of use reported in Class 8 (see Plate C) other forest use in 1959 which is the result of facilities development not keeping up with increased use. A larger proportion of visitors probably originated from private land inside or outside the forest than would be the case if more facilities were available.

We believe that of all figures reported in the annual form 446 reports, "purpose of visit" estimates are the least reliable as to numbers.

The reported figures are not based on any reliable sampling system indices, or questionnaires. However trends in use are fairly obvious wherever estimators remain in an area long enough to compare each year with the preceding years.

The trend since 1950 may be fairly reliable with the possible exception of boating and hunting. The reported numbers are open to question.

While boating has shown an almost explosive increase from 1950 to 1959 (13 times) the increase has not been consistent over the period. The last five years increase has been far greater than any period preceding it. This explosive increase in boater use probably will continue for some time; where or when the uptrend will flatten off, nobody seems to know. However, from all indications our projections for boating to the year 1976 and 2000 appear to be low. The fishing trend seems fairly reliable when compared to statewide statistics, licenses sold, and other data. However there may be some question on the reliability of hunting statistics which we are not able to verify.

Our reported use for hunting increased constantly from 1950 to the present while the number of hunting licenses and deer tags sold statewide decreased significantly from FY 1956 to FY 1958. Reports for FY 1959 indicate only a small increase, if any, over FY 1958.

Statistics provide little indication of a trend in the duration of visits for fishing, hunting and other dispersed types of recreation use. If anything, the trend is toward a shorter <u>average</u> length of

visit due primarily to the growth of urban and semi-urban centers and improved transportation in and near the national forests. This population factor tends to increase the number of people who go to or from their home in a single day in pursuit of their outdoor recreation. However, we are unable to identify a change in length of visit for those who travel longer distances.

We note a possible trend toward a change in activity which leads us to believe that certain activities may serve as alternatives to one another depending upon availability. In this instance a number of boaters in about the 40 to 50 year age bracket were questioned as to what their outdoor activity was before they obtained their boats. One of 20 so questioned (informally) 13 said hunting was their major activity and 6 said fishing was their major activity and only 1 had no particular outdoor activity. In this case the availability of boating water and modern easy to use outboard motor boats provided an opportunity for the expression of preference. The discussions also brought out the point that since obtaining a boat the hunters had little or no time to pursue their former activity.

The terrific up-surge in boating in California may in part account for the reduction in the sale of hunting licenses during the last few years. Admittedly, the sample is too small to be conclusive but it indicates a possible trend that will bear further study.

The growth of tourism in California, i.e., the increase in numbers of people from other states coming to California on a tour, seems to have caused some changes in the pattern of use in some areas, particularly along main routes of travel used by tourists. Some records indicate this, for example, the use in concessionaire camps where such a record is available.

Nevada Beach (Toiyabe) Hwy. U.S. 50	
California visitors	73.5%
Nevada visitors	6.0%
Other states, etc.	20.5%
Antlers Camp (Shasta) Hwy. U.S. 99	
California visitors	79.0%
Out of state	21.0%
Lakeshore Camp (Shasta) No through route	
California visitors	89 %
Out of state	11 %
Pinecrest Campground (Stanislaus) No through route	
California visitors	94 %
Out of state	6 %
Big Green Valley (San Bernardino) No through route	
California visitors	98 %
Out of state	2 %

As stated earlier in this report the average length of visit at campgrounds on through routes is significantly shorter than at terminal locations. The contention of the California Division of Recreation that there is a need for overnight camps along tourist routes seems to be borne out by this.

We have no adequate record as to the numbers of out of state visitors using national forest recreation facilities other than those cited above. However, state studies indicate that the use of all recreation areas in California by out of state visitors is increasing.

A related factor, important in recreation planning, is indicated by state studies in state parks and elsewhere and confirmed by house trailer clubs. These studies indicate that the average size of party using trailer houses is 2.3 persons while the average size of party engaged in camping is 3.7 persons. These studies appear to be conclusive at this time.

III. THE INVENTORY

The field inventory of the recreation resources of the California Region was begun in 1958. This was a year before the development of Service-wide guidelines and projections of demand, constituting the work plan for the National Forest Recreation Resources Review. The Region 5 survey was started in 1958 in order to accommodate the needs of a State study comparable to the National Outdoor Recreation Resources Review.

A site inventory system was devised, criteria were established for site suitability and quality evaluation, and an inventory was carried forward on these bases during 1958 and 1959.

The NFRS inventory was initiated in 1959. Being a more complete study, including all recreation resources, it was necessary to continue the study project on a full scale basis throughout 1959 and 1960. The project took on three phases:

1. To adapt the site inventory of 1958 to the form and content required by the Servicewide instructions.

2. To inventory recreation resources not included in the 1958 Regional Survey.

3. To initiate and complete all of the un-initiated tasks required in the NFRS. (The Regional Survey was only part of one of five tasks.)

Therefore the organization set up in 1958 for the California survey was continued through 1959 and a large part of 1960. This consisted of a Regional project officer to direct the program region-wide and a selected project officer, full time on each national forest, all financed out of 070 funds.

The principal jobs that needed to be done by mid-1959 to fulfill the needs of the California State study was the inventory of suitable sites on national forest and private lands within the national forests, the transcription of data thus obtained to forms provided by the State for its study and the compilation of additional data for the State not considered useful for national forest purposes or, at best, not in a form that could be used in the NFRS.

In addition the national forest survey organization was called upon to assist the State in user surveys such as preference and point of origin studies all of which were time-consuming to forest and regional project officers.

During 1958 and 1959 the Regional project officer was in almost constant consultation with the State planning staff and advisory groups in the development of the State study. During this same

period, Regional and forest project officers were called upon for consultation and for providing data for county and inter-county surveys. As an example of this, a group of eleven southern California Counties initiated a sub-regional survey (regional to them) using data and forms quite different from those of Region 5, the State study and the NFRS.

The Regional organizational procedure established to meet these complicated, duplicating demands was based on the ranger district as the operating unit. Under this system the forest project officer, selected to spend full time on the project, was either a staff officer, a district ranger, or an experienced assistant ranger directed by a staff officer. In all cases the project officer was relieved of other major duties.

The project officer, in getting the work done, trained and directed ranger district personnel in carrying forward each phase of the project. About 60%of the ranger district project work, including field inventory, was done by district rangers themselves. The remainder by experienced assistant district rangers.

In all cases where management decisions were required these decisions were made by the forest supervisor or the district ranger in consultation with staff and project officers.

Project officers were trained in group meetings in northern and southern California, such meetings lasting from 3 to 4 days each. At least 6 such meetings were held under the direction of the Regional project officer in 1958, 1959, and 1960. Additional meetings were held where special problems evolved in the work. Some of these were forest meetings others were interforest meetings.

In 1959 and 1960 Washington office inspectors reviewed the region's work. Due to the fact that the original site inventory was based on different criteria than those established servicewide, some problems developed in the conversion of 1958 and 1959 survey data to national standards. The main basis of this problem was due to the fact that the regional inventory was not limited to projected demands. It included all suitable lands according to suitability standards. Inventoried areas, therefore, were large and were not broken down into small site units, as provided in the work plan. Part of the conversion project was to select those parts of the large areas needed to meet the projected demands of the NFRS. In order to obtain consistency and resolve the problems in this work. two Regional ihventory checking officers in addition to the Regional project officer were set up in 1960. Their job was to review district inventories and field sample selected sites for accuracy, availability, suitability and quality. All sites were reviewed and approximately 10% were field checked or adjusted if errors were obvious and could be corrected. Each forest was field checked and adjustments were made where and as needed. In a few cases on

some districts and areas, site data had to be revised or remapped. This work was well worthwhile in eliminating inconsistencies and error.

A. Procedures

1. General Policy and Procedural Guidelines

a. Principal policies governing survey

The basic site inventory (Regional) was made in accordance with instructions entitled National Forest Recreation Resources Review-R-5 on forms devised for the purpose. The data prepared in this inventory was revised and supplemented to comply with Servicewide instructions dated August 1959 entitled "Work Plan for the National Forest Recreation Survey". For simplicity the data prepared as directed in this work plan is dubbed NFRS and is so referred to in this report.

A meeting of National Forest Supervisors reviewed the program of work in the recreation survey during its initial stages and in 1959. Limitations on the site inventory were discussed at that time and it was agreed that the guidelines of approval sub-regional management direction would be observed in making the inventory. Subregional management directives in most cases provided for zoning which placed limitations on recreation development. Generally recreation was restricted in areas zoned primarily for timber management and in other areas where "Front Country" fire control problems were acute. However such zoning did not eliminate recreation development in restricted zones, it merely circumscribed it and defined the conditions where recreation development was permissible.

While this would appear to limit the inventory, actually it did not except in a few southern California Canyon bottoms where the extent of useful land was insignificant anyway.

In practice it was found that areas that met the quality and suitability criteria of the recreation inventory also met the standards under which recreation development was permitted in management directives.

Inventories were made in areas now subject to fire closure in southern California. These were made on the basis that outdoor recreation in southern California is a year-long activity and during winter months, when the high country is snowbound or cold, heavy demands are evident in the warm low country ordinarily subject to fire closure. It was concluded that suitable areas were needed in this zone and that they would be developed at an appropriate time in the judgment of unit managers. No special written directives were required covering the relationship of the inventory to sub-regional management direction guidelines. Each forest supervisor reviewed the inventory with regional and forest officers.

43,906 acres of national forest administered as National Monuments were excluded from inventory since these lands are no longer administered by the Forest Service.

71,600 acres of national forest lands were not inventoried since their present classification and use excludes all forms of recreation use. The largest tract in this category was the 53,000 acre North American Condor Sanctuary on the Los Padres. Other significant areas excluded were a 6,770 acre municipal watershed on the San Bernardino and the 2,580 acre Onion Creek Experimental forest on the Tahoe.

Some forms of recreation use were determined to be compatible with the other experimental forests such as at Blacks Mountain and San Dimas. Recreation sites in these areas were insignificant. However one or two small sites were listed in the San Dimas unit. Other miscellaneous exclusions were mainly natural areas.

All areas except those listed above in exclusions and National Monuments were investigated for dispersed area use values. Many areas were excluded for certain types of uses such as areas in and around communities or settlements where hunting is or should be restricted for safety reasons.

A number of adaptations were necessary either to interpret NFRS work plan instructions or supplement them. These adaptations or interpretations were covered by supplements to the work plan or converting factor instructions. These supplements were found in the appendix as pages 20 to 27.

The Region decided to inventory, as part of the project, existing and potential roadside rests which are not part of potential camp or picnic areas. These are small sites often less than an acre and usually within the highway setback zone. If such areas had observation site values they were called observation sites. Otherwise they were handled in the same manner but are not listed in site summaries tables F and G.

Instructions for the roadside rest inventory are on appendix pages 22, 23, and 24.

Winter Sports

It was felt that in this Region, since snowplay was such an important part of winter sports use and its site requirements were quite different, they should be inventoried separately. Supplement to the work plan appendix page 26 explains how the compilation of the two types were handled.

NFRS inventory forms for winter sports sites were used but were appropriately labeled so that the two types of sites could be segregated and summarized separately. In the final compilations on Tables F and G form 7 the inventoried areas were combined.

However, using separate summaries on NFRS form 13, and separate projections and converting factors, the two uses were evaluated. These records are preserved on a district basis. The identity of two forms of winter sports use is not carried to forest and Regional summaries.

Riding and Hiking Areas

The work plan does not contain a clear cut definition of riding and hiking areas. Our supplement appendix page 27 provides a definition and puts a limitation on what we might classify as riding and hiking area, separating them from unusual interest, wilderness type or general forest areas. Without further definition we found this classification could get out of hand.

Our concept was that of the work plan plus the concept that such an area should be an outlet for the use around recreation areas where space is required for day rides or walks in interesting surroundings. It was our feeling that each recreational area complex or community should have such an area in its vicinity. Eventually, multiple-use management would need to recognize the use and adjust land management plans accordingly.

Boating and Fishing Waters

The NFRS work plan instructs us that task 3 is a recreation inventory of recreation opportunity on national forest land and waters related thereto. (Task 3 pg. 3 of work plan) Instructions for task 3 further defines the inventory by limiting it to "---lands administered by the forest service and waters on or flowing through these lands."

Inasmuch as there are many reservoirs on the National Forests which overflow or flood private land in greater proportion than they flood national forest land while the useful shoreline is predominately national forest, it was felt that further definition was needed. Using the strict definition "waters on or flowing through" often gives an erroneous picture of the opportunity provided by national forest land. In some cases it was found that 70% or more of the flooded area was private (power company) while 70% or more of the useful existing and potential access was National Forest.

In these cases it was decided to proportion the reservoir water surface area to government and private land for inventory purposes on the basis of the useful shoreline. Useful shoreline or useful access is that which can be readily used by foot trail or road. This definition is further explained in the section of this report on converting factors.

Excluded from the inventory of waters are such areas as Lake Tahoe, the Pacific Ocean and others where national forest lands provide access but the water bodies are outside the forest. Waterfront sites were inventoried in such cases but not the waters.

b. Demand projections as a guide to intensity of inventory

The Region 5 site inventory was initiated and almost completed by the time the NFRS work plan was available. The initial inventory therefore was not limited to demand projections except in a general way. In general existing or potential heavy use areas were inventoried more intensively than others and lower quality sites were accepted as suitable.

Work plan instructions do not limit the investigation of dispersed area values to demand projections so the relationship of demand to inventory is not affected materially.

Since the R-5 site inventory on many forests included a great deal more land in larger areas than would have been included under the NFRS work plan it was necessary to make some adjustments or adaptations.

The principal adaptation to divide larger areas to smaller sites and define which parts of areas inventoried should be allocated to meet demands and which parts to allocate to "buffer" or "non use" was accomplished by the use of a supplemental R-5 form. This form devised by the Region is numbered NFORRR 536 R-5 which is entitled "Work Sheet for Preparation of Table F." The form and instructions are included as appendix pages 20 and 21.

In using the supplemental form, each site was reviewed by the unit manager with the projected demand in acres before him. Each site was evaluated from the standpoint of management and the sites probable best use based on quality and location. Each site was broken down on the site map and the area recorded on the form in one of the five use classes, buffer, and non-use. The last category was either the lowest quality portion of the site or part of the site that the unit manager considered unavailable for site development. Appendix, page 20, explains the use of this form more fully.

The use of this form and procedure was found to be a real aid to assess our ability to meet the demand projections in the five use classes on a more judicious basis than quality alone, location particularly being such an important factor. At the same time it helps eliminate from the summaries the area that probably would not have been inventoried under the work plan. This is a preliminary planning step, to be sure, but a desirable one which will be a big aid in final preparation of forest and district plans.

c. Quality guidelines

Original R-5 inventory quality guidelines were used in evaluating unallocated sites for later allocation to use classes 1 to 5. These guidelines are contained in the Regional instructions prepared for that inventory. The following criteria were used:

Excellent (or outstanding) when the site meets the following requirements:

1) It is closely associated with a recreation feature such as a lake or stream, meadow, or unusual scenery.

2) It is accessible by a good road or will be accessible by planned road development.

3) It has a good spring or other source of domestic water supply within one mile of the site.

4) It has desirable cover for aesthetic purposes and adequate shade for the comfort of users.

Good
The site meets the conditions of item 1 for excellent, but fails to satisfy one of the remaining requirements.

Fair
When the site will not meet the conditions of item 1 for excellent and fails also to meet one of the remaining requirements.

Sites not associated with a recreation feature (item 1) and lacking more than one of the remaining requirements usually are not sufficiently valuable for recreation purposes to justify a rating. However scarcity of suitable sites to meet demand may necessitate the use of less than fair sites under the above criteria. In such cases, all usable sites must be considered and given relative ratings.

Field checks on selected districts and the field checks on a sample basis made later using NFRS criteria indicated that the quality ratings determined as above compared favorably with the NFRS results. In the case of larger areas which were broken down into development area, buffer and non-use the tendency was to upgrade the site relative to its ratings since only the best parts were allocated to development classification.

Since site quality is primarily an aid to local planning and additional field review was deemed desirable in this planning process the quality ratings were considered acceptable.

Other use classes and dispersed areas were evaluated according to work plan instructions.

2. Conduct of Field Inventory

Under the organization and procedure outlined in the foreword to this section of the report, the inventory was conducted in accordance with work plan instructions with the exception of certain preliminary steps that were not necessary since the site study was already almost complete when the instructions were issued.

These were the preliminary steps of making tentative determinations of area requirements through preliminary projection and preliminary converting factors, i.e., the use of forms 1, 3 (table A) and 5 (table C) which were set up to establish about how much land needed to be inventoried and the general areas where the surveys would be made.

The actual site inventory was made primarily on overlays to aerial photos. In a few cases, 2-inch topographic maps were used as a base for mapping. Each site was mapped on the ground by regular yearlong personnel either district rangers or experienced assistant rangers.

The quality criteria and suitability standards in the R-5 inventory it was found, automatically took care of differences in quality in different forests and sub-regions. As an example timber itself (forest environment) was an attraction in southern California while in the north much more was needed than timber. In other areas, climate or climatic relief was an attraction itself.

Before sites and areas were listed as available for recreation, a procedure was established to review each site and area by the unit managers (forest supervisor and district ranger) with the project officer. In this step the unit managers made a decision on each site and area as to -

1) Its availability.

2) Its limitations as to use.

In many cases, unit managers limited site use to a class of use such as campground or picnic area based on sub-regional management direction guidelines, land use plans, pending land use plans, recreation area plans, or other multiple-use management factors. Form 563 R-5 was a material help in recording these decisions.

B. Collaboration

Department of Fish & Game

The primary collaborator in the NFRS study in this Region was the State Department of Fish and Game who aided the Region and forests materially in evaluating hunting and fishing.

Initial contacts were made with the Department of Fish and Game at the Director's level where the study program was outlined. The Region was assured Department cooperation and the Regional managers of the Fish and Game management areas were so notified.

Forests worked directly with game managers and fishery biologists in their respective areas in evaluating the resource on the forest and later reviewing the work done.

In addition a member of the department assigned to the California outdoor Recreation Plan staff collaborated in furnishing data developed in the California study and discussing the study made on the National Forests.

Department of Water Resources

Collaborated in furnishing data on the State Water Development Program, the size, kind, flow lines, and location of prospective water developments. This includes the department's data on water development contemplated by other agencies such as power companies as well as prospective State projects.

Department of Natural Resources

Collaborated on furnishing statistical and other data relating to use and user information which was useful in resolving the problems of developing converting factors. The Recreation Plan Committee of the department reviewed converting factors and directly assisted in developing same.

Department of Public Works - Division of Highways

Collaborated in providing data on highway programs and locations through the offices of their district engineers and provided estimates of the time when highways would be improved.

Local Colleges, Scientific groups and Societies

These groups assisted forest project officers in locating and evaluating such unusual interest areas as Geological, Archeological and Historical sites. Through the assistance of such groups it was possible to gain valuable knowledge about areas and to locate and evaluate new or little known areas.

Others Who Collaborated

Assistance was solicited of ski area experts on the evaluation of ski areas. It was the established practice of the project officers to seek this assistance in evaluating each location and to obtain advice as to possible other areas which might have been overlooked.

Mountain climbing experts and groups assisted in locating and evaluating mountain climbing areas.

Other agencies such as the Los Angeles Department of Water were consulted with reference to use and management of boating and fishing areas which was valuable in developing converting factors for these uses.

Winter sports operators provided useful information on capacities of winter sports slopes for skiing and the proportion of users in attendance on and off of slopes at given times.

IV. FUTURE RECREATION DEMAND

A. Factors Influencing Demand

1. Population

Undoubtedly population is the most important single factor affecting recreation demand in the California Region. Several population estimates and projections are available. A series of estimates is provided by the U. S. Census Bureau, one of which was used in the forecasts of recreation demand on the National Forests in California and Nationwide. A second estimate has been prepared by the Department of Finance of California for use of State agencies and others. A comparison of the selected Census Bureau estimate (Series III for the period 1960 to 1980) and the State estimate for California follows:

POPULATION ESTIMATES OF PROJECTS FOR CALIFORNIA

Year	USFS	California Dept. of Finance
	Thousands	Thousands
1955	12,917	13,035
56	13,431	13,594
57	13,879	14,190
58	14,337	14,752
59	14,639	15,275
1960 Projections		15,830
1966	17,700	19,374
1976	21,800	26,936
2000	38,100	42,000

It may be noted that the California Department of Finance estimates and projections are consistently higher than the series III estimates by the Bureau of Census. The difference ranges from almost 1% higher in 1955 to almost 4.5% higher in 1959. The spread continues to increase in the projections to 9.4% in 1966, 23% in 1976 and drops to a difference of 10.2% by 2000. These are significant differences.

The 1960 U.S. Census for California was 15,717,204. This is only 113,000 less than the Department of Finance projections for that year. This would indicate that the State's figures are more nearly correct.

However, be that as it may, it is clear that the population of California is increasing at a rapid rate and there is no indicator on the horizon today which would lead to an assumption that this trend will slow down.

2. Leisure Time

Other factors affecting recreation are the average annual hours of work per worker. Department of Labor statistics indicate that the hours worked per year will increase leisure time by the amount of such reduction. It would have even a greater significance to outdoor recreation than just the magnitude of the increase, for the increase would mean the recreationist could travel farther as well as stay longer and probably go to the outdoors more often.

3. Mobility

This probable trend is reflected in estimates or projected passenger car miles per car travelled in the future. Statistics developed by the California Outdoor Recreation Resources Review Staff, published in their report indicate passenger car use for recreation and social purposes will double between the years 1959 and 1976.

4. Spendable Income

Estimates of per capita income provided for the NFRS study indicate that per capita income will increase almost 80% between the years 1957 and 2000.

Examples that the burgeoning population, the factors mentioned above, and others are affecting outdoor recreation on the National Forests are visible everywhere. The expansion of communities within National Forests, the development of private lands for recreation purposes are examples. In the coastal areas of California beyond the range of suburbia, large ranch properties are being broken up for recreational residences at alarming rates. Ranch lands along the coast that would not bring $100 per acre in 1950 are being sold in parcels for as high as $8,000 per acre in highly desirable recreation locations within 3 to 4 hours of metropolitan areas.

B. Development of Demand Projections

Looking ahead to 1976 and 2000 there is little doubt that recreation use of the National Forests in California will increase. The big question is how much?

There are a number of procedures that may be used to supply an answer to this question. They vary as to explicit or implied

assumptions about the future, but all of them rest on the assumption that the U. S. will continue to enjoy peace and prosperity.

The assumption of continued peace is an important one. During World War II the number of visits to the California National Forests declined from 4.7 million in 1941 to 1.4 million in 1943. The effect of continued prosperity is less apparent from past statistics since the number of visits continued to climb during the depression of the thirties. It might be argued that increased leisure and the "free" nature of National Forest recreation compensated for the lack of money.

Another common assumption is that population will continue at a rapid rate and that the established trends in mobility, leisure time, and spendable income will also continue.

There are also implied assumptions that are inherent in projection methods. These lead us to the conclusion that the results of the projections should be considered primarily as planning goals. The principal implied assumption is that the quantity of recreation services supplied will equal the quantity demanded regardless of price and that this point of equality will be the same as the projected level of consumption. This is a very broad assumption. In the case of supply it presupposes that facilities will continue to be built and maintained with no deterioration of quality.

In the case of demand the presuppositions are that any change in consumer taste and desire, in levels of income, and prices of substitute and complementary recreational goods and services will have no effect other than to place the quantity of National Forest recreation services demanded equal to the quantity supplied.

It is apparent that future use of recreation facilities will depend upon both the supply of these facilities and the demand for the services they provide. It is also apparent that supply is affected by costs and demand is related to population income levels, leisure time, mobility and consumer preference. It is apparent in many ways that supply and demand are not entirely independent variables and that supply at times creates demand. Were it not for this fact, most of our modern inventions would never have become popular.

It is this factor that injects a weakness in projection methods which employ past use, so often confused as demand, as a basis of projecting future needs. If in the past a supply did not exist then mathematically there would be no demand. The development of a reservoir providing boating and fishing in the desert where non existed before is a point in argument. In this situation, supply creates a demand where none existed before.

It is for this reason that projections based on past use by whatever method projected, need to be evaluated and adjusted by judgment insofar as the supply of new attractions can be foreseen.

Projections for the National Forests were developed in the Washington Office of the Forest Service on the basis of visits to the National Forest. The visits have been used as the unit of demand because the more reliable records of past recreation use are in terms of visits and the visit is uniform on all National Forests whereas visitor days per visit varies from place to place and can be determined from ratio factors of visitor day to visit area by area.

The method used in the projection involved determining the per capita use of the National Forests in the past thus relating visits to population.

The increase in demand for outdoor recreation on the National Forests is assumed to be related to the four factors -- (1) increased population, (2) increased per capita income, (3) increased per capita leisure, (4) increased per capita travel.

With these assumptions the methodology used to make provisional projections involved the hypothesis that per capita recreation visits would increase relative to the multiplicative effects of the projected increases in income, leisure, and travel.

Thus the per capita visits in any selected year is equal to the per capita visits in the base year (in this case the average of 1955-1957) multiplied by the ratios of income, leisure, and travel in the selected year to the base year.

From this approach it was found that per capita visits Nationwide increased from 0.36 visits in 1957 per capita to 1.81 visits per capita in the year 2000.

In order to allow for regional differences these ratios were developed for 10 geographic regions in the United States and were applied to population estimates of states for the key years. These projections were then allocated to the National Forests by States. States were used in this case because the Census Bureau estimate is by states, and National Forest recreation use statistics are available by states.

The results of these computations was the Nationwide projection of 120 million visits by 1966, 230 million by the year 1976, and 600 million by the year 2000.

For California the result was a projection of 20 million visits by 1966, 36 million by 1976, and 95 million visits by the year 2000.

These Statewide projections were then broken down into preliminary projections for each National Forest in eight use classes and 5 purpose of visit classes based on statistical curves drawn for each forest and use from past reports.

These preliminary projections by forest and use class were reviewed by the National Forest region in consultation with the Washington Office statisticians and adjusted to account for known changes that would affect demand forest by forest and use class by use class. After this adjustment and agreement the projection became final for the NFRS for each forest and the region.

Table V shows the final projections for all of the National Forests in the California Region. A portion of the Statewide projections have been allocated to forests in California administered by other National Forest regions. A complete summary of all projections for the Region is to be found in the statistical section of the NFRS for the Region. Since the National Forest Survey was conducted on a ranger district basis forest projections were distributed to the ranger districts forest by forest.

The method used in this process was to review past use and trends for each district. With this data forest and ranger staffs apportioned the projections mathematically on the basis of past use and trends. These apportionments were then adjusted by judgment and appraisal of new developments which would affect demand such as new highways and reservoirs. Records of the procedure and results of this process are on file in National Forest and ranger district offices.

At the completion of this stage of projection each ranger district in the California Region had an estimate of visits to that district for the years 1976 and 2000 by 8 use classes and five purposes of visit. The latter number of visits is included in the 8 classes of use and is not in addition to them.

1. Conversion of visits to acres

a. Visits to visitor days.

The first step in this process was to establish the number of visitor days represented by the projected visits, use class by use class and by purpose of visit categories.

The ratio of visitor days to visits varies from forest to forest and area to area. In addition the ratio varies between use classes. Generally, the further an area is from the point of origin of the user, the longer the stay per visit. Some uses, such as picnicking, by their very nature are visits of less than a day. Others such as recreation residence visits are much longer often many days. Averages vary too, with distance from a major highway.

Recreation use statistics were studied on each of over 100 ranger districts in the region by forest staff and ranger. Ratios were established for each class of use and purpose for each district. The method used was to tabulate reported use in visits and visitor days over the past 10 years, observe trends, evaluate new road construction probabilities and either use past estimated use ratios

or adjust them. After applying this ratio to the district estimate in visits the result was a projection in visitor days for the use classes and visit purposes.

Records of the procedure and results of the process are on file in ranger district and National Forest offices.

No forestwide or Regionwide visit to visitor day ratios were compiled since they serve no useful purpose. Therefore, in order to obtain the estimated use in visitor days by forest, State and Region, it was necessary to summarize district figures into forest and forest into State and Region totals. The results of this summary is found on Table V (Form 2 of the NFRS).

The Statewide average ratios of visitor days to visits, as computed from summaries are given below.

		VISITOR DAYS PER VISIT	
	Use Class	1976	2000
1.	Campground	3.49	3.52
2.	Picnic Sites	0.73	0.70
3.	Winter Sports Sites	1.10	1.10
4.	Organization Camps	7.08	7.22
5.	Hotels & Resorts	3.67	3.66
6.	Recreation Residences	9.91	10.50
7.	Wilderness	3.53	3.45
8.	Other Forest Use	1.25	1.34
	Purpose of Visit Class		
1.	Hunting	2.77	2.85
2.	Fishing	2.49	2.32
3.	Boating	1.09	1.02
4.	Swimming	0.67	0.68
5.	Hiking & Riding	1.35	1.27

TABLE V

PROJECTIONS OF RECREATION DEMAND

CALIFORNIA - REGION 5

	Visits		Visitor-days	
	1976	2000	1976	2000
Area Class				
1. Campgrounds	9,896,000	24,793,000	34,579,000	88,029,000
2. Picnic Sites	5,980,000	13,940,000	4,358,000	9,878,000
3. Winter Sports Sites	5,700,000	11,400,000	6,034,500	12,483,500
4. Organization camps	575,000	1,460,000	4,069,200	10,549,700
5. Hotels and Resorts	1,950,000	4,860,000	7,158,500	17,816,000
6. Recreation-residence	788,000	1,703,000	7,825,000	17,120,000
7. Wilderness	490,000	1,470,000	1,731,000	5,075,500
8. Other	9,870,000	33,457,000	12,281,000	44,827,000
Total	35,249,000	93,083,000	78,036,200	205,778,700
Purpose-of-visit Class				
1. Hunting	2,804,000	3,825,000	7,759,000	10,214,000
2. Fishing	5,895,000	12,696,000	14,635,000	29,769,000
3. Boating	1,529,000	3,061,000	1,662,000	3,137,000
4. Swimming	1,984,000	3,966,000	1,329,000	2,684,300
5. Hiking and Riding	1,469,000	3,906,000	1,982,250	4,955,500
Total	13,681,000	27,454,000	27,367,250	50,759,800

E. Visitor Days to Acres - Converting Factors

The final step in measuring demand in terms of acres for inventory and planning purposes is to develop converting factors. The object of converting factors is to establish how much land area is required to supply any given number of visitor days per year. The development of such factors must consider not only area capacity at any given time but the spread of use seasonally and weekly. The use objective is to provide sufficient area to accommodate the average number of visitors on the average weekend during the peak season of use.

Converting factors were developed for R-5 for the NFRS project using handbook procedures. National Forest project officers met in February 1960 in two separate meetings for the purpose of developing factors. Prior to the meeting, data was gathered on the forests by the separate project officers and was worked into a usable form for discussion and decision prior to the meetings, one in Northern California and one in Southern California. No attempt will be made here to record the wealth of material developed by the forests.

Considerations involved in these discussions:

1. What degree of use can given vegetative and soil types withstand without significant deterioration to the aesthetic environment.

2. What degree of use can a given area support with reasonable safety to the user considering that certain controls would be provided, especially in boating and winter sports types of uses.

3. What concentration of use will the recreationist tolerate and still obtain the inspirational returns from his outdoor experience.

The following are a few of the compilations used to arrive at converting factors:

Campgrounds

Converting factors were worked up by each forest project officer for campgrounds on his forest for which he had reasonably accurate count of users. Then judgment was brought into play as to whether the area in question was overused, underused, or optimum. The remarkable thing about this study was the degree of uniformity, forest by forest, in verifying a factor of .001 or 1,000 visitor days per acre.

The regional average use on all developed campgrounds in the region was 1,342 visitor days per developed acre per year. The degree of use varied from very light in some areas to as high as 1,800 visitor days per acre in others.

Generally, the more heavily used areas, (over 1,000 visitor days), were deteriorating or were deteriorated. Those below this were holding their own, it seemed, almost regardless of soil or vegetal type. An exception was in the east side of the Sierra type - well watered, short season of use, non compacting soils, etc. where five selected areas indicated a safe level of use of 1,200 visitor days per acre. .0008 was agreed for this general area. .001 was agreed for the rest of the region.

Following are some sample selected area calculations:

Inyo National Forest

Big Bend Campground - annual use		5,520 visitor days
Weekend day use		51 visitors
Average size party	3.75	11.25 per acre

Converting factor $\frac{51}{11.25} = 4.5 \quad \frac{4.5}{5520} = .0012$

It was the judgment that this camp would support somewhat more use than at present.

Lower Rock Creek Campground

Annual use		33,948 visitor days
Weekend day use		309 visitors
Size party	3.75	11.25 per acre

Converting factor $\frac{309}{11.25} = 27.5 \quad \frac{27.5}{33,948} = .008$

Lower Rock Creek Campground: It is judged this campground is used to its safe capacity.

Shasta National Forest

Antlers Campground

Annual use		17,133 visitor days
Weekend day use		274 visitors
Size party 4.0		12.0 per acre
Converting factor	$\frac{274}{12} = 23$	$\frac{23}{17,133} = .0013$

Area could stand additional use.

Lakeshore Campgroumd

Annual use		15,763 visitor days
Weekend day use		196 visitors
Size party 3.77		11.31 per acre
Converting factor	$\frac{196}{11.31} - 17.3$	$\frac{17.3}{15,763} - .0011$

Area used to safe capacity.

Stanislaus National Forest

Pinecrest Campground - annual use		87,085 visitor days
Weekend day use		825 visitors
Size party 3.67		11.01 per acre
Converting factor	$\frac{825}{11.01} = 75$	$\frac{75}{87,085} = .00086$

This area is overused.

San Bernardino National Forest

Strawberry Flats Campground

Annual use (including picnics)		16,420 visitor days
Weekend day use		208 visitors
Size party 3.7		11.10 per acre
Converting factor	$\frac{208}{11.10} = 18.75$	$\frac{18.75}{16,420} = .0011$

This area is used to safe capacity.

Eldorado National Forest

Nevada Beach (Toiyabe)

Annual use		22,372 visitor days
Weekend day use		336 visitors
Size party 3.64		10.92 per acre
Converting factor	$\frac{336}{10.92} = 30.7$	$\frac{30.7}{22,372} = .0014$

This area is sandy and could support more use. Annual use does not include picnic use which if added would change the factor to about .0012.

June Lake Campground

Annual use			17,920 visitor days
Weekend day use			160 visitors
Average size party	3.75		11.25 per acre
Converting factor	$\frac{160}{11.25}$ = 14.23	$\frac{14.23}{17,920}$ = .00079	

The area is used to safe capacity.

Big Bend Campground

Annual use			5,520 visitor days
Weekend day use			60 visitors
Size party	4.0		12.00 per acre
Converting factor	$\frac{60}{12}$ = 5	$\frac{5}{5,520}$ = .0009	

The area is used to safe capacity

Twin Lakes Campground

Annual use			43,880 visitor days
Weekend day use			420 visitors
Size party	4.0		12.0 per acre
Converting factor	$\frac{420}{12}$ = 35.0	$\frac{35.0}{43,880}$ = .0008	

This area is used to safe capacity.

Los Padres National Forest

Los Prietos Campground

Annual use			12,200 visitor days
Av. weekend day use			112 visitors
Av. size party	4.0		12.0 per acre
Converting factor	$\frac{112}{12}$ = 9.33	$\frac{9.33}{12,200}$ = .00077	

This area is overused and must be reduced by controls, etc.
Safe use estimate at 1,000 visitor day per acre.

Angeles National Forest

Big Pines Campground

Annual use			91,380 visitor days
Weekend day use			681 visitors
Av. size party	3.0 ($2\frac{1}{2}$ units/acre)		7.5 per acre
Converting factor	$\frac{681}{7.5}$ = 90.7	$\frac{90.7}{91,380}$ = .0010	

The use in this area is partly picnic and partly camping. It is somewhat over used in places, but the use figure is conservative.

Lassen National Forest

Almanor Campground

Annual use			52,780 visitor days
Weekend day use			437 visitors
Av. size party	3.5		10.5 per acre
Converting factor	$\frac{437}{10.5}$ = 41.6	$\frac{41.6}{52,780}$	= .00079

This area has been severely overused. When brought under control, it should support a use of 1,000 visitor days as against 1,263 as of 1959.

Six Rivers National Forest

Bluff Creek #'s 1, 2, and 3

Annual use			9,975 visitor days
Weekend day use			118 visitors
Av. size party	3.6		10.80 per acre
Converting factor	$\frac{118}{10.80}$ = 10.92	$\frac{10.92}{9,975}$	= .0011

This area is used about to its proper capacity.

Picnic Grounds

Based on reported use many picnic grounds have been used more heavily than campgrounds. Records show use in one area as high as 2400 visitor days per acre for the year. However, the reliability of the reported use in visitor days is very poor. This use could as well have been reported as 1200 visitor days, the weak factor being in the length of stay ratio.

Whether or not picnicking is more damaging than camping was debated, but the facts are inconclusive. It would seem that it would be more damaging because of the energy factor of people. A unit which attracts four parties during the day is being constantly exposed to a new and lively group, whereas in a camp the same party spends the entire day and uses up its energy running about and thereafter settles down or seeks other pursuits.

It was agreed, however, that in general the tolerable use factor for picnic areas should be the same as for campgrounds. The same factors were therefore used.

Organization Camping

Regionwide use of organization camps was found to amount to 467 visitor days per acre per year on the average based on estimated developed acres. Use varied from as little as 181 to a figure much higher. Considering the pattern that such use should take in future development, it was decided the present average was high if the environmental and forest interpretive values were properly integrated. Provision must be made for play areas, special activity opportunities and for development of nature areas in addition to living and community areas. This use is not to be confused with group camping which is included in the camping activity in this study. The use factor was established at 333 visitor days per acre per year, providing a converting factor of .0030 in this activity.

A selected group of 8 camps in the region, selected because they seemed to have an optimum area for all around organization use tend to verify the selected factor as follows:

> 8 camps total 88.8 acres which can be considered the "developed" area. Annual use for these camps is reported at 33,000 visitor days. A converting factor for this use would be:

$$\frac{88.8}{33,000} - .0027$$

Argumentswere made for a higher figure, and undoubtedly a higher use could be achieved by closer supervised multiple organization use of given areas; but it was concluded that .0030 provided a practical figure for the study.

Commercial Public Services

Average use of commercial areas in the region for 1958 was 1020 visitor days per acre. However, the pattern of use on commercial areas can vary almost infinitely depending on the type of commercial use. Modern hotel-type accommodations run as high as 2000 visitor days per developed acre on well developed areas in northern California. Use in southern California forests in this category are, strangely, much lower, perhaps due to their proximity to the source of people and the reduced need for elaborate commercial development on Government land. A converting factor based on present use would amount to about .0013 acres per visitor day.

We can safely assume that future developments on national forest land will be established on the basis of a demonstrated need. Therefore, a higher use level may be expected.

Site damage considerations are not nearly as important in this use as in others since they will be intensively developed and culturally cared for. Use will be patterned after more recently

developed hotel-motel types with appurtenant play and activity areas. Such developments can be expected to support a use of 2000 visitor days per year in the north and 1000 visitor days in the south. Overnight accommodations for winter sports (not needed in the south) and other activities (fishing and boating) account for the difference between the north and the south. The converting factors are: .0005 and .0010 respectively.

Reported use in the hotel and resort class is made up primarily of commercial use for overnight accommodations, and thus the projections reflect this type of use. We have no data or projections on the use factors for gas stations, stores, and such facilities. The need here is related to use in other classes and purposes and is not directly predictable in terms of visits or visitor days.

Recreation Residences

Regional average use of recreation residences as reported in 1958 amounted to 767 visitor days per acre or .0013 acres per visitor day.

We have little or no basis of establishing an optimum in this use; nor do we have a basis of establishing a "safe" use except as might be considered acceptable in campgrounds in annual visitor days per acre.

With better transportation, longer vacations, and shorter work weeks we might expect a higher use of summer home areas in general.

More remote tracts tend to have longer length of stay per visit, while more accessible tracts have shorter lengths of stay with many more visits. The result in visitor days tends to be relatively close.

The use factor selected under these circumstances is 1000 visitor days per acre - a converting factor of .0010 acres per visitor day.

Residence use on some areas was as follows in 1958:

Eldorado - 450,000 visitor days on 927 acres.

$$\frac{927}{450{,}000} = .0021$$

Inyo - 52,000 visitor days on 39 acres.

$$\frac{39}{52{,}000} = .0008$$

Lassen - 21,035 visitor days on 41.28 acres

$$\frac{41.28}{21035} = .0019$$

Winter Sports

Considerable data was gathered on winter sports areas. Detailed statistics were compiled and the opinion of winter sports operators and users were obtained.

In winter sports we have a less serious problem of site deterioration through use and a greater problem of safety to the user. Length of season becomes an important factor in the use capacity. Both present use and estimated safe capacity are found to be much lower in visitor days on the southern forests than in the north. This is due to the shorter season and the proximity of the resource to the origin of the user. This makes for a wider variation between weekend use and weekday use.

In this activity two types of use had to be recognized because of difference in the safe level of use in numbers at one time and in the type of terrain suitable for use. These are skiing, for which much information is available, and snow play.

The use on 36 ski and snow play areas were analyzed and the safe capacity of a ski slope (fact and judgment) was pegged at 30 per acre of open used slope. (The California Recreation Plan Committee arrived at this same figure independently.)

Regional average use for all ski areas for 1957-58 was .0046 or 220 visitor days per acre. Use in 1957 and 1958 in different areas varied considerably because of a variety of factors which were considered in deciding of converting factors. The following are a few of the areas on which there were reliable counts.

AREA	Use Visitor Days	Used Area Acres	Converting Factor
ANGELES	SKIING		
Kratka Ridge	8,500	50	.0059
Blue Ridge	19,000	86	.0045
Table Mtn.	24,728	80	.0032
Baldy	26,000	125	.0048
SAN BERNARDINO			
Snow Summit	55,000	100	.0022
Snow Valley	100,000	120	.0012
(Believe San Bernardino use figures are high and include snow play)			
LOS PADRES			
Mt. Pinos	900	3.6	.0040
Mt. Able	5,000	10	.0020
ELDORADO			
Heavenly Valley	54,500	80	.0015
Echo Summit	6,500	10	.0015
Peddler Hill	6,000	8	.0013
Edelweiss	19,300	19	.0010
INYO			
Mammoth (1957)	142,497	250	.0015
Mammoth (1958)	230,717	250	.0011
	SNOW PLAY		
Mt. Pinos	12,000	9	.00075
Silvertip	8,500	5	.0006
Manker Flat	41,000	20	.0005
Snow Valley	44,000	22	.0005

Considering pattern of use as well as season, it was concluded that ski slopes on the four southern forests would support 250 visitor days per acre per year on cleared use slopes and the remaining forests 660 visitor days per acre per year. The converting factor for this use is .0040 and .0015 respectively.

The proportion of snow play to the total winter sports activity in the region varied from place to place, but in almost all cases this use was so significant that it had to be calculated separately. The proportion varied from as low as 5-10% of the total winter use on Inyo to 60% in the middle Sierra, and 80% in southern California. For determining area requirements the two types of uses are to be calculated separately and then consolidated on the N.F.R.S. tables. Inventory sheets are to be appropriately labeled and segregated.

After review of available data the use factor agreed upon was set at 2000 visitor days per acre for all forests. This provides a converting factor of .0005 acres per visitor day.

Since safety was not as serious a factor in this use as in skiing, we are not too concerned with the number of people on an area at one time. Therefore the same factor will be used regionwide. Tobogganing was not considered separately for site development on national forest land. It may be necessary to isolate this form of use in the future because of special site requirements.

Wilderness

Present wilderness use varies greatly in the region from area to area and forest to forest. It varies from as low as 1.0 acres per visitor day on the Desolation Valley area and 0.8 acres on the Mt. Dana Minarets to as high as 35.0 acres in the Marble Mountains.

What the optimum use of an area is will vary with individual judging, his tastes and experience. It will depend a great deal on the usable area and the opportunity for developing useful trails to disperse visitors.

Factors were worked out for most wilderness areas in the region based on miles of existing trails and a projection of miles of potential trails that would serve a useful purpose.

We believe that four parties or 16 people per mile of trail (only one half would be traveling at one time) at any given time will obtain reasonable wilderness experience, isolation, and satisfaction. This is about the maximum use we would want to consider to preserve the plant cover and aesthetic values along the trail way.

The maximum capacity of an area on this basis would be 16 times the miles of trail, times the length of the season (usually 100 days). To derive a converting factor it is necessary to divide the area of the wilderness in question by the assumed capacity.

Wild and wilderness areas in all parts of the region were tested using this approach. It was remarkable how uniform the result. This produced a factor 1.5 acres per visitor day in the northern forests and 2.0 acres per visitor day in the four southern forests. This is a higher level of use than many areas now receive and lower use than some of the more heavily used now receive. However if we eliminate the use on the fringes of the heavily used areas (the first 3 or 4 miles from point of access) the use drops below the selected converting factors. Calculations were also made to determine the capacity on the basis of camping areas. This yielded converting factors as low as .4465 acres per visitor day. This method was discarded since it is known that even in wilderness areas people will congregate in a few select camp areas even if they appear to be crowded. Camping sites do not seem to be a limiting factor.

In the Bear Creek study a 33,000 acre segment of the High Sierra Wilderness was studied with respect to capacity independently of the NFRS. Present use is 12,600 V.D. on 33,000 acres or 2.6 acres per V.D. Ranger Snyder estimates future capacity at two times present use while camp area capacity is estimated at 23,650 visiting days. Using the latter figure the acres per visitor day (converting factor) would be 1.4 acres. At twice present use it would be 1.3 acres.

Snyder's estimates tend to verify our estimate of 1.5 for northern California. The factor in southern California was higher due to the more limited opportunity to disperse people over useful trails. The visitor days per acre for the north and south are 0.67 and 0.50 respectively.

Swimming Sites

Several heavily used swimming beaches were used to arrive at converting factors for this use. In almost all cases the capacity of beaches is limited only by room to sit and lie in family groups and by the pattern of use. The latter is related to the proximity of a beach to populated areas. Heavier use is obtained where large numbers of people come for a short stay (1-2 hours) as against those more remote where people come for a long stay (3 or more hours). This assumes, of course, that swimming water is not a limiting factor. In a few cases this is the case.

Jackson Lake on the Angeles was selected as a fair level of use. It includes the necessary partial parking. Users from nearby camps, picnic areas or organization sites need less parking than those of more distant origin. A combination is the more common situation. Using this area, a converting factor of .0004 acres per visitor day or 2500 visitor days per acre was indicated. Some areas such as Bass Lake on the Sequoia and Pope Beach on the Eldorado indicated converting factors somewhat lower but did not include car parking which was provided elsewhere. When this need was considered the factor approached the .0004 selected for use regionwide.

Boating Sites

Considerable information was gathered on boating sites and boating waters. Site damage, safety, and aesthetic values are not important considerations in determining the capacity of an area to handle people. Nevertheless, boating sites are among the most valuable recreation sites we have. Usually they are the most scarce.

Data was studied from Crowley Lake near the Inyo, Bass Lake on the Sierra, and Hanson Dam in Los Angeles County. Crowley Lake had the most reliable data and at the same time presented about the best that a site could be expected to handle on a combination basis, i.e., launching, rental, etc.

Crowley Lake landing handled the needs of 53,284 visitor days on 12 acres of boat landing site. The maximum of boats on this 4550 acre lake at one time was 3810 boats.

The site included about one-half the parking area which would be needed for this number of visitor days. This was considered a normal situation as many users park their cars and trailers at other locations, such as at their camp or at a resort.

This lake is used for only 90 days (limited by the City of Los Angeles). The capacity of a boating site to handle people (boats) varies with the length of season of use since there are few other limiting factors, such as site deterioration, etc. It was decided, therefore, to establish converting factors to reflect the length of season of use. The converting factor for the 12 acre Crowley Lake site for a 90 day season was .00023. This is the factor for 53,284 visitor days in three months or 17,700 per month on 12 acres. The following factors result from the indicated season of peak use:

30 days	=	.00068
60 days	=	.00034
90 days	=	.00023
120 days	=	.00017

The above factors are used regionwide.

If the water area of a given water body is a limiting factor, the area listed as available for that body of water for boat sites should not be greater than that which reflects the capacity of the lake. On lakes open year long, site requirements are based on the four peak months use. In most cases 80% or more of the use will occur during this period.

Boating Waters

There are many variables in determining the capacity of a boating water to provide boating. The size of the water, the usable water, the length of season, and the kind of boating are a few.

A number of boating waters were reviewed. Among them were waters limited to fishing only, others with restrictions as to water skiing or having speed restrictions, others zoned for the various kinds of boating.

In the review it was determined that it takes just about as much water per boat to furnish fishing as it does for water skiing. This is due to the need for trolling or casting space for each boat.

Most waters on the National Forests will probably be used to provide for all forms of water use on a controlled basis. Bass Lake on the Sierra was the best example for a heavily used body of water.

This is a lake of some 1165 surface acres. It is heavily used for all forms of boating. Speed boating and water skiing are limited to an area 200 feet from shore and are excluded from certain coves and swimming areas. The shore area has a speed limit and is reserved to fishermen. The lake is subject to traffic rules which provide for speed limits, direction of travel, spacing and general boating

deportment. The Sheriff's Department patrols the lake with two patrol boats and maintains a lookout tower to keep the lake under surveillance and enforce the rules.

The lake is used yearlong but the peak season is confined to the four summer months. It is a middle elevation lake (3500') and is considered typical of the present and future lakes in the region. It supports the kind of use we may expect on most of our lakes of comparable size. Data on use is reliable.

The visitor day boater use on Bass Lake for the four summer months is 192,000:

$$\text{Converting factor } \frac{192000}{1165} = .006 - 4 \text{ mo. season}$$

For one month the factor is	.0240
" two months " " "	.0120
" three " " " "	.0080

In few instances will there be longer peak seasons than four months. In some cases the season will be shorter. Even in lakes used yearlong the pattern of use is such that a four month factor of .0060 would cover the bulk of the use for the year.

Unless specific reasons are evident, such as a shorter season of use or exceptional use at low elevations during the winter, the four month factor is used.

On peak days there are as many as 400 boats on the water or almost 1 boat to each 3 acres. Average day use during the peak season however is 200 boats or 5.8 acres per boat.

The California Recreation plan study suggests boating water needs for the state are approximately 1/3 acre of boating water per boat. This of course is not to be confused with the number of boats on any given water at one time.

Fishing Waters

The impact of fishermen on California's fishing waters (cold-water) has been such that the State has committed itself to planting of catchable fish sufficient to meet the demand. The planting objective is to provide a success ratio of about .2 fish per fisherman hour of effort.

One lake and one stream, both heavily fished, have been selected to provide a converting factor for this kind of fishing effort. These were selected because accurate records have been kept on angler hours, angler success, and stocking. In addition surveys indicate that anglers are satisfied with this level of success and will tolerate this degree of use on these streams.

June Lake in Mono County is a lake with some 298 acres of fishable surface. It is fished both from shore and from boat. The fishing season is 184 days. The annual plant of catchable fish is 95,000 fish per year; the return to the angler about 80% or 75,000 fish per year.

Planting is based on an angler success ratio of .2 fish per angler hour. However, the actual success has been .4 fish or twice the objective of the Department of Fish and Game. Angler days use is placed at 23,438 which provides a converting factor of .0127. However since the lake is not fished to its capacity of .4 fish per angler hour, it is estimated based on the objective of .2 fish per hour that it can support 2 times the fishing effort or 46,876 angler days of use. This establishes a factor of .0063 for lakes. This is about 159 angler days per surface acre.

Based on "put and take" fishing which ordinarily provides for a fishing season much longer than 184 days (in many cases fishing is yearlong), the converting factor is conservative for this type of use.

In applying this factor to larger lakes such as Shasta, it must be used with judgment. In this case fishing water area should be based on the area in coves and within 200 yards of shoreline since this is about the only place people will fish.

Rush Creek test stream was used to determine a converting factor for stream fishing based on the present practice of "put and take" fishing. The creel census and angler use data on the 2.2 miles of Rush Creek is accurate and indicative of the fishing effort and stocking practiced in this heavily used area.

The census on this stream shows that there were 13,000 angler days of use. The yearly stocking is 65,000 fish with an angler return of 52,000. This is a success ratio of 4 fish per day. The season for this stream was 184 days. The surface water area of this stream is estimated to be 9 acres. This yields a converting factor of .0007 acres of water per angler day or 1430 fisherman days per surface acre.

On large streams such as on the Klamath and parts of the Trinity the forests will have to use judgment in deciding what proportionate area of stream surface to apply these factors. 50% of the Klamath and 60% of the Trinity might be considered to give a realistic capacity in angler days as this is the proportion of these streams that will be accessible to anglers and usable.

These converting factors for stream and lake fishing for cold water fish indicate the fishing potential that can be achieved by "put and take" methods presently being used in all but a small part of California where waters are accessible to planting crews. In inaccessible areas smaller fish are plated by air drop or pack teams.

If reliance was placed on the natural productive capacity of streams a far higher converting factor would be needed.

The NF-ORRR is an inventory of recreation opportunity on national forest land and usable waters related thereto. (See Task 3, page 3, and paragraph 1, page 62, of the instructions.)

For purposes of determination of the capacity of fishing waters to furnish aquatic activities we will use the following definition and method of relating the resource to demand:

> "Waters related thereto" are waters on, overflowing or bordering on national forest land.
>
> In determining surpluses or deficits in meeting the demands for aquatic activities the water area attributed to national forest land will be in proportion to the useful access to such waters afforded by national forest land, i.e., if 50% of the useful and potential access to a lake is via national forest land, then 50% of the lake area will be considered National Forest for inventory purposes.

In most cases this will approximate the proportion of the national forest land under the water. The above approach will provide the means to tell how much aquatic activity is made available by Government ownership.

Hunting Areas

Present Hunting Capacity

Present hunting effort in California varies from as intense as 0.59 acres per hunter day to as little as 100 acres. Actually, there are many areas that have a negligible hunting effort - probably as low as 1000 acres per visitor day, although they support game in significant numbers.

The average combined hunting effort - regionwide is as follows on national forest land:

$$\text{Area} - \frac{18{,}000{,}000 \text{ acres}}{1{,}910{,}000 \text{ hunter days}} = 9.4 \text{ acres/hunter day}$$

Sample areas were sought in the Region where reasonably accurate visitor day counts could be compared with area hunted which would be representative of the hunting conditions and what we could expect to be hunting capacity as exists today. The capacity does not take into account development of wildlife habitat or fully managed wildlife crops. They indicate only what can be expected under present seasons, bag limits and habitat conditions.

Selected samples varied from as intense as 0.59 acres per hunter day to 80.4 acres per hunter day for combined hunting, i.e., big game and small game. Our statistics indicate that considerably less than 10% of the hunting effort is for small game on the national forests.

The selected samples yielded converting factors applicable to general areas as follows:

1. Brush type with woodland and timbered ridges typical of the Angeles, Cleveland, etc.
   Sample area $\frac{115,200 \text{ acres}}{38,500 \text{ hunter days}}$ = 3.7 acres per hunter day.

2. Open timber - sagebrush flats and meadows typical of the Inyo and most of the Modoc, the east side of the Plumas and Lassen, etc.
   Sample area $\frac{615,000 \text{ acres}}{125,080 \text{ hunter days}}$ = 4.9 acres per hunter day.

3. Coastal types such as the Douglas Fir, mixed pine and fir on steep slopes typical of the Klamath and Six Rivers.
   Sample area $\frac{140,800 \text{ acres}}{18,144 \text{ hunter days}}$ = 7.8 acres per hunter day

After discussing these samples further with Fish and Game people and our wildlife section, the resulting factors were rounded off to be applied by forests and parts of forests representing our judgment of capacities under present conditions:

Factor #1 — 4 acres per hunter day.
- Angeles
- Cleveland
- San Bernardino

Factor #2 — 4 acres per hunter day
- Inyo
- Modoc
- E. Lassen
- E. Plumas
- E. Klamath
- Sequoia
- Mendocino

Factor #3 — 8 acres per hunter day.
- Klamath, West
- Six Rivers
- Shasta-Trinity

For conditions on the remaining forests it was decided that cover and wildlife conditions warranted a factor somewhere between #2 and #3. A fourth factor was placed at 6 acres per hunter day.

Factor #4 — 6 acres per hunter day.
- Eldorado
- Plumas, West
- Lassen, West
- Los Padres
- Sierra
- Stanislaus
- Tahoe

Potential Hunting Capacity

If we consider converting factors for future conditions up to the year 2000 with fully managed fully utilized deer crops with habitat management, different factors would result.

The fir forests of Northwestern California would be broken up into clear-cut patches of all ages, large areas would be more usable for the hunter, brush fields would be broken up with browse-ways, feed and escape areas, etc. The areas would be both more productive and more usable.

In arriving at a converting factor for potential hunting capacity, a large amount of data collected by the Department of Fish and Game on deer herd management areas was reviewed. In addition, recent data compiled by the California Recreation Plan staff were considered.

Since big game (deer, bear, etc.) and small game are ordinarily hunted on the same areas in the national forests, a combined rating was desired.

The range of intensity of hunter use to as high as 0.59 acres per hunter day and the range of hunter success which is tolerated in deer hunting to as low as one deer per 50 hunters yields only the conclusion that hunters will hunt to an intensity of 1/2 acre per hunter day and will tolerate a success ratio of one deer to 50 hunters.

Statewide figures for deer hunting in California compiled by the Department of Fish and Game and the University of California Department of Zoology place California hunting effort at 21.6 acres per hunter day, ~~including all natural deer range. Our figures indicate less than 10 acres~~ The deer kill state for NF as a whole. wide, predominantly under a buck law amounts to 37% of the harvestable crop of both sexes. The average success ratio is 0.2 deer per hunter (1 out of 5 hunters kill a deer). Based on hunting effort, the kill is 1 deer to each 22.5 hunter days.

It follows that under proper herd and kill management (full harvest) on present range and range conditions three times as many hunters can hunt with the same degree of success. This would reduce the acres per hunter day to approximately 7 (1/3 of 21).

It is agreed that a success ratio of 1 deer to 15 hunters would still be tolerable as to hunter satisfaction under future conditions. This is 1/3 of the present success ratio; thus, three times as many hunters could hunt. The area per hunter day, for deer alone would be reduced to 2.33 acres.

No detailed data were available for small game such as for deer. However, the effort is light on the National Forests, less than 10% at present. To care for this element the 2.33 factor can be reduced by 1/7 to produce a factor for the potential of 2 acres per hunter day.

For present predictions, this factor could be applied to areas of the National Forests as the potential hunting capacity under fully managed conditions. However, the development of this factor is for comparative purposes only as it shows what selected areas could support under fully managed conditions.

A few Sample Areas for Hunting Area
Converting Factors Considered in Deriving Factors

Mono National Forest

$$\frac{615{,}040 \text{ acres}}{125{,}080 \text{ hunter days}} - 4.91 \text{ acres/day}$$

Angeles-San Bernardino

$$\frac{115{,}200 \text{ acres}}{28{,}500 \text{ hunter days}} - 3.7 \text{ acres/day}$$

Mammoth-Inyo

$$\frac{32{,}000 \text{ acres}}{54{,}116 \text{ hunter days}} - 0.59 \text{ acres/day}$$

Klamath River

$$\frac{140{,}800 \text{ acres}}{18{,}144 \text{ hunter days}} - 7.75 \text{ acres/day}$$

White Mountains

$$\frac{115{,}840 \text{ acres}}{1{,}440 \text{ hunter days}} - 80.4 \text{ acres/day}$$

East Side Winter Range

$$\frac{82{,}120 \text{ acres}}{2{,}880 \text{ hunter days}} - 29.6 \text{ acres/day}$$

High Sierra-sub Alpine

$$\frac{126{,}080 \text{ acres}}{20{,}000 \text{ hunter days}} - 63.0 \text{ acres/day}$$

Riding and Hiking Areas

Reliable figures on the use of areas for riding and hiking areas are not available on the National Forests. In one sense all national forest is used for riding and hiking in one way or another. However, we want to consider here, areas outside of wilderness that are used or suitable for use as riding and hiking areas generally contiguous to recreation concentration areas or communities where space for day walks or rides is needed.

A number of sample factors were worked up using data from pack stations for use and assuming an area based on a trail strip. For example use from Agnew Pack Station represented 6791 visitor days use of 36 miles of trail. Assuming a trail strip as 10 chains (1/8 mile) the area would be 2880 acres.

$$\frac{2880}{6791} = .42$$

A number of these were worked up and resulting factors varied from .64 to .40. However the length of trail and assumed strip width are purely arbitrary.

Estimates on several areas in southern California where there were adequate trail networks or riding and hiking was practical cross country a factor of .02 resulted. As at Idyllwild where use of 2620 acres was estimated at 131,000 visitor days use.

$$\frac{2620}{131000} = .02$$

This was finally accepted as a factor for southern California type areas.

Density of use in northern California is not expected to be nearly so high as in the south since so much more area is suitable for dispersal. Heavily used areas around south Lake Tahoe indicated a use of around .05 acres per visitor day. 37000 days use was estimated on 1850 acres.

$$\frac{37000}{1850} = .05$$

This was selected as the factor for northern California.

Unusual Interest Areas

No single factor or group of factors was worked up for unusual interest areas as the kind of area and situation would have to be considered in each unusual interest situation. Areas such as scenic areas may be used at about the level of wilderness areas, 1.5 to 2.0 acres per visitor days. Others such as geological areas may be considered to be used on the level of campground use at .001 acres per visitor day. Historic areas might take a much different level of use depending on the area. Therefore forests were instructed to work up their own factors for their use after the areas were inventoried so their potential use could be factored.

SUMMARY OF CONVERTING FACTORS

Region 5

Activity or Purpose	Factor Acres/Visit Day	Use Visit Day/Acres	Area of Application
Camping	.0010	1,000	All except Inyo
"	.0008	1,250	Inyo NF
Picnicking	.0010	1,000	All except Inyo
"	.0008	1,250	Inyo NF
Organization Camp	.0030	333	All Areas

SUMMARY OF CONVERTING FACTORS (Continued)
Region 5

Activity or Purpose	Factor Acres/Visit Day	Use Visit Day/Acres	Area of Application
Commerc. Pub. Serv.	.0005	2,000	All north forests
"	.0010	1,000	Angeles, Cleveland, Los Padres & San Bernardino
Recreation Residence	.0010	1,000	All Areas
Winter Sports Ski	.0040	250	Angeles, Cleveland, Los Padres, San Bernardino
"	.0015	660	All north forests
Winter Sports Play	.0005	2,000	All Areas
Swimming Sites	.0004	2,500	All Areas
Boating Sites	30 day-.00068 60 day-.00034 90 day-.00023 120 day-.00017	1,475 2,950 4,440 5,920	All Areas
Wilderness	1.50 2.0	0.67 0.50	All north forests Angeles, Cleveland, Los Padres, San Bernardino
Boating Water	30 day-.0240 60 day-.0120 90 day-.0080 120 day-.006	42 83 125 167	All Areas
Fishing Water (Lake)	.0063	159	All Areas
Fishing Water (Stream)	.0007	1,430	All Areas
Hunting Area	4.0	0.25	Angeles, Cleveland, San Bernardino
Hunting Area	5.0	0.20	Inyo, Modoc, Mendocino, Sequoia, E. Lassen, E. Plumas, E. Klamath
Hunting Area	6.0	0.17	Eldorado, W. Plumas, W. Lassen, Los Padres, Sierra, Stanislaus, Tahoe
Hunting Area	8.0	0.13	Six Rivers, Shasta-Trinity, W. Klamath
Riding & Hiking	.020	50	Angeles, Cleveland, San Bernardino, Los Padres.
"	.050	20	All north forests
Unusual Interest	Variable	Variable	All Areas

V. Relation of Resources to Demand

1. Surpluses and Deficits

a. Development Sites

Surpluses and deficits in the area required to meet the projected demands were determined ranger district by ranger district by comparing projected area requirements with the inventory of established and potential area available for the key years 1976 and 2000. NFRS table F (form 9) was used for this purpose. Forest and regional summaries of surpluses and deficits were determined by summarizing district data. However prior to the final district

compilation tentative balances between supply and demand were struck district by district. Using NFRS table B (form 4) adjustments were made between districts with apparent deficits and those with apparent surpluses shifting only that part of the demand projection in acres, that judgment indicated could be reasonably shifted from one district to another, use class by use class. The final district surpluses and deficits reflect varying degrees of adjustment between districts. Demand adjustments between forests other than those made in the final projections of visits is to be made in the recreational planning program insofar as shifts in demand are fasible. Supplemental statements on NFRS table G (form 10) suggest possible shifts.

Compilations indicate that except for the Angeles National Forest, there is sufficient suitable land on the forests to meet the site requirements of the year 1976. The compilations also indicate that by the year 2000 there will be serious deficits in development site area on at least four forests. Additional deficits show up on other forests but these are relatively minor. Appendix table 1 to 10 lists the forest surpluses and deficits.

District and forest summaries, generally, except for four forests would indicate that we will be able to meet the demands of the year 2000 insofar as suitable area is concerned. However, the data in the district and forest summaries are misleading in two ways.

Compiled on a district-wide basis, the potential areas are too often not in the right places to meet local demands.

The balancing of supply and demand on a district-wide basis implies the assumption that demand is evenly distributed over the district.

The problem of the location of recreation sites in relation to the need often makes ranger district summaries of surpluses and deficits misleading since demand usually asserts itself along major highways or near special attractions where, as often as not, suitable government lands are at a premium. On the other hand demand pressures are least felt in the more remote areas where a great deal of the potential recreation area is located. This poses a problem of finding ways and means such as improved accessibility and added attractions to disperse the demand to more remote areas. Another matter here to be considered is that of limiting stays along major transportation routes to one or two nights in camp and picnic areas so as to provide for the tourist user and to disperse those who want to stay for longer periods.

Recognition of the probable location of future demand pressures for public classes of use is essential in planning. In many locations even low quality lands need to be reserved for high priority use and must not be dedicated to lower priority uses. In other words, location not quality often dictates use in many areas.

Local areas of deficiency will occur to some degree in some classes of use on all ranger districts and all forests by the year 2000, many by the year 1976 and many are with us now. The most significant major area of deficiency is the Angeles National Forest where, if all of the potential area were developed within the next five years, it would not satisfy the projected demand and certainly would not provide for the latent demand which improvement itself would generate.

Major deficiencies will also occur on other forests such as on the San Bernardino, Los Padres, the Sierra, and others. Little of the demand in such areas is dispersable to other areas. In these cases coordinated planning with the state and counties is essential in order to determine what part of the demand the National Forests should attempt to meet. Answers are needed to such questions as whether the Angeles forest areas should be limited to picnicking in order to satisfy day use needs of the metropolitan area or whether it should be developed to satisfy the need for overnight camping and other uses. There needs to be agreement on such points in order that each jurisdiction can plan their part and provide a balanced program adapted to the needs of people.

It appears from the compilations that except for the Angeles and except for local deficiencies we will be pretty well able to meet the projected demands of 1976 with the resources available for the development of camping, picnicking, organization, commercial, and residence sites. Deficits will occur in waterfront sites for boating and swimming on four forests and in winter sports only on the Angeles. By the year 2000 these deficits will increase and new ones develop.

For details on surpluses and deficits see appendix pages 1 to 10.

1) Camp and Picnic Sites (Classes 1 and 2)

Major deficits in camp and picnic sites on the Angeles will occur by 1976. By that year, only about 2/3 the projected requirements can be met. By the year 2000 only about half of the needs can be met, despite adjustments in lower priority forms of use such as summer homes. To approach even this close to the needs, suitable lands of a quality which would not be considered on other forests had to be included in the inventory. This includes many sites which should be planted to a tree cover now, to be useful before the year 2000.

By the year 2000 significant deficits occur on the Los Padres, San Bernardino and Sierra. Little if any of this demand can be shifted elsewhere since it includes predominantly day use or overnight weekend use. These are the highest priority forms of use and the highest quality lands were allocated to these classes but the allocation, by necessity, included low quality lands.

In areas where suitable area was plentiful, except for needs dictated by location, only the highest quality lands were allocated.

2) Organization Sites (Class 3)

Deficits occur for both 1976 and 2000 on the Angeles, Los Padres, San Bernardino and Sierra. Primarily this is due simply to lack of suitable area. In some cases, however, management decisions ruled out organization types of use in some areas. This contributed to the deficits. Except in areas of deficit the quality of lands allocated to this use was predominantly excellent. Unlike a part of camp and picnic site locations, organization use offers more flexibility in allocating locations except where management direction excludes it.

3) Commercial Public Service (Class 4)

Commercial public service site allocation is the most inflexible of the five unallocated types, classes 1 to 5 in the NFRS. In making the allocations it became evident that this use class should have been set up in a special class such as boating and swimming, since its location is dependent upon a public need generated by a complex of other uses, and not on the simple fact of physical suitability. However in making allocation, this fact was considered by unit managers and a significant part of the deficit is due to this fact. In addition to the four forests of major deficiency the Angeles, Los Padres, San Bernardino and Sierra, deficits appear in 1976 on the Eldorado and in 2000 on the Sequoia and Six Rivers.

Location rather than quality was the dominant factor in allocating area to this use.

4) Summer Home Sites (Class 5)

Demand for this type of use is so colored with past policy in allocating area that the projections are only goals dictated by policy and judgment. There is no way of knowing how many people want summer homes on the National Forests. Our projections and our allocations are only an expression of what we are willing to allocate at this time. However, other than on the major deficit forests , deficits show up only on the Eldorado after 1976.

Management direction severly limits where summer homes may be located. However aside from this factor there is considerable flexibility as to location and site quality suitable for this use. Area allocated is generally of lower quality and on lands of 10 to 30% slope.

5) Summary Area Classes 1 to 5

In the allocation of land to the five use classes so far discussed it may be noted in the statistical section that deficits occur in some uses as in organization sites, summer homes and commercial services while at the same time surpluses occur in unallocated uses. This is due primarily to the matter of location and multiple use management direction. By use of regional form 536 R-5 this factor was evaluated in making allocations by unit managers. Lacking this kind of review fewer deficits might have appeared than would be the case with a strict arithmetical allocation. The sum of the apparent

deficit for the five use classes for the region are 5665 acres by 1976 and 22,737 acres by 2000.

6) Swimming Sites (Class 6)

Seldom is this use a primary purpose of visit in Region 5. More often it is a supplementary activity to other uses. For the most part, the projected needs could be met on most forests. Small deficits appear on the Mendocino, Los Padres, and San Bernardino in 1976. These deficits increase by 2000 and new deficits appear on the Inyo, Shasta-Trinity and Sierra. The largest deficit appears on the Shasta-Trinity, where undoubtedly the needs will be met by swimming from docks or boats.

This use was not considered adjustable from one district or forest to another.

This use, as with several others, is difficult to assess from the standpoint of the relationships of supply and demand. Many lakes and reservoirs have no suitable swimming sites, yet if there were sites people would use them. In other words if there were a supply there would be a demand. District-wide surplus and deficit compilations do not reflect such local deficits if they can be called that. So it is that many deficits are either "paper" deficits or the need will be satisfied in other ways than beach development such as boat or dock swimming.

7) Boating Sites (Class 7)

Boating is one of the fastest growing outdoor recreation activities in California, perhaps nationwide. Projections do not reflect the explosive increase in this activity in the last 3 to 5 years. Projected demands are therefore low. In this activity, as with many others, supply creates demand. Therefore it is reasonably certain that every accessible suitable body of water will have a demand for boating use and hence for boating sites.

On many bodies of water, existing and potential suitable boating sites are at a premium. On many large bodies of water the water surface could furnish much more boating than the existing or potential boating sites could service. Boating sites in such cases are more valuable for boating than any other use regardless of quality. In fact they may be the most valuable recreation properties from the public standpoint in providing visitor days of recreation.

In any event, so far as district compilations are concerned, only the San Bernardino indicated a deficit by 1976. By 2000 the Klamath, Mendocino and Sierra list deficit areas. Local deficits will occur elsewhere however; this should be recognized and assessed in the preparation of area plans. Few, if any, deficits of this nature are transferable from district to district or forest to forest.

8) Winter Sports Sites (Class 8)

There seems to be an ample supply of suitable winter sports sites, generally, on the National Forests to meet the projected needs to the year 2000. Exceptions are the Angeles where deficits occur by 1976 and the Sierra where they will occur by the year 2000. Otherwise, there are sufficient areas of excellent quality which are accessible or will become accessible by adequate highways and have the necessary parking and service opportunities.

Demand projections and site inventories include both ski areas and snowplay areas. Possible toboggan sites were not considered in the inventory. In the overall winter use program the need for this use and the place of the National Forest in supplying it needs further study. At present thousands of toboggans are used on unsupervised, undeveloped slopes on National Forest lands. When such areas are developed for snowplay, toboggan use must be restricted for safety reasons or provided for by the development of improved slides.

b. Dispersed Areas

Statistical data available for dispersed area use, heretofore called "Purpose of Visit" are extremely hypothetical thus the projections are hypothetical. In addition, converting factors devised to convert use into acres is hypothetical. The inventory of resources in the various dispersed area classes is factual but because of the hypothetical nature of projections in visitor use and acres, resulting mathematical surpluses or deficits are hypothetical. By their nature they imply an even distribution of use within the study unit and they assume human preference and tolerances are identical, one individual with another.

Converting factors assume maximum use at the upper level of tolerance for the kind of use concerned or at an assumed level at which the resource will not deteriorate. So called surpluses and deficits in dispersed area use must be considered in light of these assumptions and in light of their hypothetical nature. They should be used with caution and should be considered only as an indicator of where trends might lead in some areas. Intensities of use envisioned by converting factors have arrived or have been surpassed in some uses in some places, it is true, but in how many new places or how evenly this will occur, when and how long, is purely hypothetical.

In any event this is the best we can do now with the data available in indicating what the future could hold in dispersed area use.

1) Wilderness Type Areas (B-1)

Wilderness-type area converting factors and inventory are based on the present Forest Service concept of established wilderness areas. As provided in the work plan all areas having suitability for wilderness were inventoried and evaluated for this purpose. The unit management decision as to availability for such

use is a complex and weighty one and must consider how badly each given area is needed as related to how badly other resources need to be developed in the same area. For the most part however so far as recreation itself is concerned with a few exceptions, the NFRS indicates that mass recreation needs can be met without developing areas inventoried as possible wilderness.

Because of this and because of the character of inventoried areas, less than one-third of the area inventoried was considered unavailable from a unit management point of view. Out of 900,000 acres inventoried almost 291,000 acres, 32%, were eliminated as unsuitable or unavailable.

Projected demands for wilderness indicate that there will be deficits on at least five forests by 1976 to the extent that if all surpluses and deficits were balanced there would yet remain a deficit of over 286,000 acres. By the year 2000 deficits will spread to eleven forests with a net deficit of over 5,500,000 acres. The Sierra and Inyo showed the greatest deficits probably because those forests had the highest use in years past. Some forests, such as the Plumas, Six Rivers and Tahoe have no established wild areas thus no established use and no projection Areas on these forests appear as surpluses.

2) Unusual interest areas (B-2)

This class includes such areas as scenic, virgin, geologic, archeologic and historic.

Projections for this form of use were manufactured from projections of "other forest use" on the basis of the amount and kinds of areas inventoried, unit by unit. In this process it was assumed all unusual interest areas would be used to their maximum safe level. A variety of converting factors were used depending upon the type of area. Some were considered as having a capacity equivalent to wilderness, others, such as historical sites equivalent to campgrounds and so on. Since demand was based on inventory, no deficits appear. For the most part, surpluses or deficits are meaningless in the class of use. Each unit has what it has and no more, and each will be used to the extent of the interest it generates and its proximity to concentrations of people.

3) Hunting (B-4)

Ninety percent of the hunting in California National Forests is for big game. Small game hunting generally takes place on the same areas as big game. However, it is next to impossible and would serve no useful purpose to map out small game areas except in a few instances where specialized species are involved. The reason it is not possible to map such areas is that this activity is so spotty and so dispersed that maps would be meaningless. Generally such hunting takes place along streams and roadways, near areas of concentration or in a patch of brush here or there, or, as in pigeon shooting on some pass or fly-way where the birds fly to and fro.

It is not at all certain that hunting, as a recreation activity, will continue to increase with population as our statistics would indicate from past records. Some present indications are that it will not. Hunting licenses sold in California during the past five years have not kept pace with population.

In any event the compilations show that there will be deficits in hunting resource acres on 12 out of 17 forests by 1976 and 14 out of 17 forests by 2000.

If all surpluses and deficits were balanced the net deficits would be over 21,000,000 resource acres by 1976 and almost 36,000,000 acres by 2000. We believe that long before pressures develop to the extent deficits indicate, demand will fall off and become latent. The trends do indicate however that there is a real need for maximum habitat development, full use of the habitat, and full management of game species.

In all probability hunting effort, generally, will not expand beyond the levels indicated by converting factors. In other words, as in the economies of money, the balancing effects of supply and demand will take over.

4) Fishing (B-5

There is little doubt but that fishing use will continue to increase on the National Forests to the extent that suitable water is available and fisheries management provide enough fish to supply the minimum acceptable success. Fishing will occur at low success levels, if not as a primary purpose of visit, at least as a supplement to general aquatic and forest recreation activity.

Based on presently accepted fishery management techniques such as "put and take" fishery management in areas of high intensity use, few deficits are indicated from our inventory and projections. Only the Inyo shows significant deficits. By and large, deficits will be in fish, not fishing waters and as with hunting, supply and demand factors will seek a balance based on consumer preference. If the recreationist can't catch fish he will do other things. Nevertheless it is clearly indicated that the maximum must be done to provide the best kind of habitat in all suitable fishery waters so as to provide for the maximum number of people.

5) Boating (B-6)

This use is one of the fastest growing outdoor recreation activities in California. How long the prodigious growth in boater activity will continue is not known. The activity has certain "fad" characteristics but peoples' love for water activity and the continued improvement of boats and motive power for boats lead to the conclusion that an increase will continue for a long time to come.

Because of the low projection of demand and the large area of suitable water, much of it now not accessible to boats, only insignificant deficits appear. However, on many water areas overcrowded boating conditions are already with us. These conditions will spread to other

areas as services and accessibility improves. It would appear from the NFRS that the limiting factors in the future may not be in surface area of water but in boating sites for launching and mooring boats. (See remarks on boating site surpluses and deficits).

6) Hiking and Riding Areas (B-8)

Considerably more area was inventoried for this class of use than called for in projections on most forests. The reason for this is that adjacent to each recreation area complex or community there should be in our judgment, areas of varying size set up for general hiking and riding. Such areas are ordinarily large enough for trips as long as a day walking or riding to and fro. Deficits are shown on the Lassen Forest which are due mainly to private land patterns which prevail in several areas where riding and hiking area should be established.

2. Balancing & Redistributing Surplus and Deficits

The degree to which surpluses can be applied to offset deficits by shifting demand varies widely between classes of use, districts and forests.

For example, the degree to which picnicking use can be shifted from one area to another is much more limited than the degree to which camping use can be shifted. Hunting and fishing area use presents different problems in shifting than camping or wilderness use, depending on the characteristics of hunting use in the particular areas of deficit. Within any single use class the degree of shifting that can be considered varies from area to area depending upon the characteristics of the use.

It was found in analyzing the potential possibilities of shifting camping demand from the Angeles to the Sequoia, the closest unit where surpluses are available, depends on the characteristics of camping use. The overnight weekend camper cannot be expected to travel more than four or five hours from his home, the week long camper can be expected to travel a full day or longer. The same situation applies in shifting demand between districts. Therefore it is necessary to analyze the character of the use to determine the proportion that can be shifted. This was done in balancing supply and demand in this study.

On the Angeles it was found that only about 25-30% of the camper use was eligible for shifting, since 70-75% of the use is overnight camping originating from Los Angeles.

Shifts of demand to areas of surplus will be made in the planning phase of the recreation study. A number of obvious shifts were noted in memoranda form on summary sheets particularly in the wilderness activity. Others will be made and recorded in forest recreation plans when they are prepared and as better information becomes available to indicate the direction use can be expected to gravitate from areas of saturation. There is some indication that pressures do not gravitate naturally but

on the other hand we have no measure of the amount of use that has gravitated in the past. There is no way of knowing what part of projected demand will become latent as the intensity of use increases. This will depend largely on consumer preference, something about which we know little.

It is our opinion that significant shifts of demand between forests should be made at the end of the first five year planning period. During this time we will have better information on the character of demand and may have better information on converting factors which establish the area required.

VI. PROBLEMS

A. Resource Problems

One of the more important resource problems in this region which may be common to other regions, has to do with multiple use coordination. Constant vigilance is necessary in the development of timber management plans, the location of access roads and the improvement of highways to prevent the loss or deterioration of recreation sites needed in the future. Much progress has been made in meeting the problem, but not until this NFRS have we had sufficient detailed data projecting needs into the future to designate specific areas for special treatment. Development of multiple use land management plans, now in the process of development will do much to coordinate recreation needs with other development. However, the NFRS study will have further fortification when the compilation of forest recreation plans, specific as to sites and time of development are completed. The region, therefore, will program the forest recreation plans for completion in 1962.

Lack of suitable sites of high quality in some localities is a problem that will be with us for some time. An acquisition and exchange program for recreation sites could solve some situations in some areas. In many, needed lands are not available short of condemnation procedures. In some of these, low quality sites are or will be used. Often these are not in the best location in the recreation area.

There are many existing developments which need relocation of camp units or other recreation features in favor of higher priority uses such as for picnic area or for preservation of waterfront and similar zones. Some of these adjustments may result in complaints, particularly from repeat users of long standing. However, as rehabilitation proceeds, these adjustments will be made. In some areas adjustments will have to be made for parking areas.

In some areas adjustments are needed in grazing allotments and permitted use such as in wilderness type areas, not only from the standpoint of feed for tourist pastures. There is also the problem

of stock driveways to and from feed areas and damage to trails and vegetation along these routes. Most of these problem areas are recognized, but corrective measures need to be initiated. This should be programmed in area recreation plans.

B. User Problems

Overuse and site deterioration is a problem that will be with us for some time. Supervision and traffic control will solve much of this, but it will be several years before rehabilitation catches up in all areas. We lack much knowledge as to the carrying capacity of recreation areas. The ecological research project (PSWF & RES) will provide useful information in this field.

Another problem which will take more and more attention as use increases is the matter of sanitation and stream pollution. In the past with only one or two lightly used camps along a stream, people could swim and wash their feet with no particular problem to users below. However, as use increases it may be necessary to curtail bathing in all forms. The need for location of sanitation facilities in the right places is well recognized and facilities are being properly located to prevent stream or lake contamination, but the human use factor has not been fully recognized except on some lakes such as Crystal Lake on the Angeles. On others, such as Strawberry Reservoir on the Stanislaus (used for domestic supply as well as power), dangerous pollution levels have been recorded, especially during low run-off years when inflow is insufficient to provide circulation and maintain lake levels during critical periods. In such heavily used areas it may be economical (from the visitor day use values) to provide supplemental storage for release to hold lake levels up and to provide circulation for dilution and pollution control. A number of reservoirs such as Strawberry will not come up for permit (FPC) revision for many years. Until revisions to provide for recreation uses are made, we must either prevent pollution by curtailing use or correct it in other ways.

Special use problems, primarily as they arise from summer home uses, are so many and so varied as to be too voluminous to detail here. The best solution to prevent situations or problems from developing is to provide continuous supervision.

Intelligent planning should avoid future problems in use priorities, but there are many adjustments needed in the next 20 years in established uses if we are to meet plan objectives. In the adjustment program appeals may be expected, but time does not permit us to delay action in many areas on that account. Firm support from Washington and Region levels is needed to support forest actions. However, more is needed than just support. Forest administrators must have the courage and the vigor to face use adjustment problems and initiate action. In too many instances forest administrators have delayed taking needed actions in order to avoid distressing I & E problems and paper work.

The forest recreation plans should and will program special use adjustments.

C. Facility Problems

The amount and kind of substandard developments in camps and picnic grounds is well recognized. Out of some 11,000 family camp and picnic units, 80% are not up to 1960 standard. Many hunter camp units could be added to this. The region's rehabilitation program (1958) originally set five years as the period to rehabilitate all substandard areas and units. At the present rate, however, only about 60% of this five year program will be accomplished by the end of 1963 unless substantially more money becomes available.

In looking to the future we may need to provide washing and bathing facilities in many camp areas along streams where use is heavy and the danger of pollution high. In years past and at present, people have been allowed to swim and bathe in streams. Many of our older users kept clean with so-called sponge baths and did not mind. It was part of the camping experience. It is doubtful whether the future user will be content with this. Thus we may have to furnish showers, washrooms, and laundries in many areas. We must charge for this, but these things increase investment, maintenance and caretaker costs, probably more than the returns from a charge system would yield. It will also place camping facilities very close to those offered by low-cost motels, raising the question of whether the Government should be in the business of providing accommodations.

D. Access Problems

The problem of rights of way for roads in the resource development program are many and diverse. Procuring rights of way is a continuous program and is part of the all-purpose road construction program. Much of our future recreation development relies on the all-purpose road program to provide access. Much more needs to be done in right of way procurement to provide access across private land to areas near but not on the primary transportation system. Recreation plans should define the problem areas of this nature so that right of way can be procured at the earliest possible time.

In many areas access to hunting and fishing areas is blocked by private land. On many areas such as on the Cleveland and others, existing forest roads are blocked by locked gates due to right of way agreements made when these roads were constructed for fire control purposes. Some of these problems will not be solved, short of invoking condemnation proceedings, as long as the lands are held in their present ownership. Continued effort and negotiation is needed to break these bottlenecks so that full use of the recreational resources can be achieved.

Much more information is needed to assess the access problem site by site and area by area in order to develop a positive program to resolve it. This may best be handled in conjunction with the recreation planning project at the time when advance treatment of potential planned recreation sites is studied.

Road and trail needs for wilderness and other areas will be programmed as part of area recreation development and management plans. These should include acquisition in wilderness type areas to prevent undesirable access development to private lands.

E. Management Problems

Many of the long range recreation management problems have been mentioned or alluded to in the foregoing remarks on problems. Others will be evident in the development of area plans and in the analysis of planned sites for advance treatment to be scheduled for the next five years.

Land use plans need to define roadside and waterfront zones more positively, especially where needed widths are greater than those prescribed in present directives. Much has been done in the inventory program, but unless this is carried forward to general land use plans and is reflected in the plans for other uses such as timber, road and other occupancy, the needs may become submerged.

Advanced treatment of recreation sites that will be needed in the second, third or fourth planning periods is one of the most important parts of the recreation planning program. In some areas, sites will not be truly suitable without advance treatment such as afforestation. In some areas the inventory anticipated such treatment in including currently poor sites in the inventory. Where this occurs the information is noted on site inventory forms for the guidance of planners.

The major management problem involving other agencies is that having to do with development of national forest lands by agencies other than the Forest Service.

The five-year program of the California State Division of Beaches and Parks, presented to the State Legislature this year (1961), calls for 30 million dollars a year. This program mentions the use and development of National Forest land by the State. It recommends outright acquisition or revision of Forest Service special use policies and procedures to meet State legal requirements.

Los Angeles County, with a 20 million dollars a year scheduled for recreation, continues to look to National Forest land to complete its program, in word if not in documentary form.

This problem will be most difficult if these agencies acquire the finances for development and are ready to develop the areas they select before we are. If and when that point is reached, and it may be soon at the present level of Forest Service financing for recreation, we may be in the position where we will have to yield and seek exceptions to the Chief's policy. We could find ourselves in the position of "a dog in the manger" otherwise.

The region's approach to this problem, in addition to stressing our multiple use management responsibilities, is to point out the total need for outdoor recreation areas and the rate at which non-federal sites are being irretrievably lost to other uses, while suitable National Forest lands are planned and reserved for recreation use. Therefore, it may be short sighted to expend agency money on National Forest lands while needed areas elsewhere are lost forever.

VII. POLICY

A. Policy

1. Recommended Revision of Established Policies

Unless specifically mentioned in the following remarks the Region agrees with the National Forest policies outline in the Forest Service Manual Title 2300.

We suggest re-wording FSM 2301 - "Objective of Recreation Management" by adding the underlined wording as follows:

> "The Forest Service management goal for the National Forests is to serve present and future public outdoor recreation needs and to increase the public knowledge and understanding of National Forest purposes by interpreting multiple use objectives and accomplishments and special recreation features; to prevent unsanitary conditions, pollution, and forest fires resulting from recreation use; to take all measures necessary within reason to assure the safety of users; to coordinate recreation and other types of resource and land uses in a manner which will enhance and protect existing and future public recreation values."

We suggest re-wording FSM 2302 "Policies for Recreation Management", item 10, page 5, by adding the underlined words.

> "Roadside zones, trail zones, and waterfront zones will be protected and preserved for public use and enjoyment. The health and vigor of the vegetation in these zones will be maintained by removal only of hazardous trees or vegetation likely to spread virulent disease such as blister rust or become focal points of insect infestation. Where desirable, these zones will be planted to improve aesthetic values and protect the soil mantle. Such zones will be wide enough to preserve the forest environment along highways and roads, trails, streams and lakeshores important for present and future recreation use."

Delete from 2302 item 13, page 5, the words "not suitable" in the last line. The term public use in such a broad term that the policy can be construed to practically eliminate private-type special uses from the National Forests. Recreation plans should provide the basis for the location of such recreation development. In these plans, sites to satisfy the projected needs for higher priority uses will be reserved before area is allocated to private forms of use such as summer homes. Similar phraseology

should be eliminated from FSH 2335.2, item 1, first sentence.

Delete from 2302, item 14, the second sentence "National Forest development should supplement those of other agencies to provide needed public recreation facilities."

Recreation development on the National Forests should stand on its own feet. We otherwise agree with the item, insofar as coordination is concerned.

We concur on policies contained in FSM Chapter 2310 as it is to be revised to provide for the National Forest as the planning unit instead of the ranger district, according to recent directives.

We concur in the policies contained in FSM Chapter 2320 except as follows:

2321.1 - It is impossible to provide wilderness and wild areas sufficient in number and size to accommodate future needs as projected. We recommend this objective be rewritten to read as follows:

"The Forest Service objective is to provide wilderness and wild areas, within the multiple use concept of management, wherever suitable areas occur and it is in the public interest to do so."

We recommend the addition of Riding and Hiking areas to the list of approved recreation areas listed in Chapter 2320 as follows:

"2322.9 Riding and Hiking Areas. A riding and hiking area should contain a pleasant forest environment, interesting vegetative cover, and occasional views and vistas of the surrounding country. It should be large enough to permit circuit rides or walks up to six hours in length and should be located adjacent to or within reasonable distance of recreation areas or communities. Improvements may be permitted such as picnic areas and trailside camps provided they add to the use and enjoyment of the area. Other improvements or uses may be permitted provided they do not detract from the usefulness or enjoyment of the area. Motorized transportation except on improved roads within the area will be prohibited.

Add the following words to 2323.3, page 21, at the end of the first sentence: "including roadside rests".

We concur in the policies contained in FSM Chapter 2330 - Developed Recreation Sites.

We recommend adding the following to 2332.8 Avalanche Control, pages 32 and 33: "Where avalanche control is necessary to protect the public on winter sports sites operated under special use permit, the permittee will be required to execute the necessary control measures or compensate the Forest Service for doing so."

We concur in the policies contained in FSM Chapter 2340. However, the statement in 2342 entitled "Cooperation with State, County and Municipal Agencies", item 3 , would be more in accord with instructions outlined in FSH 2342.21 if prefaced by "on a limited basis . . . "

While we concur in the policy a nd instructions regarding the development of National Forest land by other public agencies, we need to be realistic and face the fact that we may have to seek some rather significant exceptions to the policy. The development program required to meet the projections of the NFRS is of such magnitude that we may have to use all the outside resources possible to supplement Federal financing.

We recognize that to allow the state or counties to develop National Forest land, while it may supplement Federal funds, endangers the application of our concept of multiple use management. However, we may be able to "have our cake and eat it too" so to speak, if we can induce other public agencies to bear part of the costs without actually taking over National Forest land. A recommendation of the California Outdoor Recreation Plan suggests financing recreation development by local agencies for local use on public properties such as the National Forests.

With respect to the policies on cooperation with other public agencies we offer the following points to be considered in modifying or extending the established policies:

1) The Forest Service will continue to assert its responsibility to manage recreation on National Forest land within the framework of the multiple use concept. In this regard, National Forest lands will be turned over to the state, cities or counties for general recreation development or operation by permit, lease or grant only as a last-resort approach if it meets the present manual and handbook requirements.

2) Where existing or potential use of an area is predominantly by residents of a single county or urban center and the urgency of the needs demands development more rapidly than a reasonable distribution of Forest Service appropriations would permit, the Forest Service should accept or in some instances seek local funds for the project. It is recognized in so doing that this may give local jurisdiction a talking point to later acquire

full control of such areas. It is felt that such a course is better than a "dog in the manger" attitude which might force more drastic measures on the Forest Service.

3) Where use of a developed area is predominantly from a single county or urban area the Forest Service should accept cooperative funds for maintenance, operation, and cleanup. If, as, and when charges are established for use of developed areas this suggested policy should be modified accordingly.

4) The Forest Service should participate in, and take every advantage of coordinated planning by the State and county within the "day use" zones of urban areas wherever the use of the National Forest is involved or influenced. However, recreation use plans in such areas, as with all other forest areas, should be within the framework of the overall recreation and multiple use plans and objectives of the national forest. Forest Service plans will be paramount on national forest lands and should be adjusted to meet "local" needs only if compatible with multiple use objectives and recreation policies.

5) We should be prepared to issue long term paid permits or negotiate exchanges with the State for park purposes on the following kinds of lands:

Those lands needed for development for park purposes surrounding key areas of State land or land to be acquired by the State which are of statewide or wider importance because of their historic, geological, scenic or silvical nature, and are outstanding in their category. Examples of this type of area are Squaw Valley on the Tahoe, Castle Crags on the Shasta-Trinity.

6) We should rarely consider transferring or leasing land merely because the State wants it and has funds for its recreation development. The area should be outstanding and eligible for the preservation of some natural or historic feature. Areas suitable for recreation site development can be coordinately planned and administered without transferring Forest Service management perogatives. Exceptions to this may occur where small tracts of National Forest land are entirely surrounded by State Park properties.

7) Where the key areas or outstanding sites are already National Forest they should continue to be developed and administered

by the Forest Service, and such private lands within or surrounding them should be acquired by the Forest Service if needed to round out development. Mt. Shasta is an example of such an area. Pope and Baldwin properties on Lake Tahoe may also fall into this category.

8) If outstanding examples of the region's landscape of a given kind are already preserved as park properties (National or State) sufficient to serve the purpose of preservation, additional area of such examples on the National Forest should continue to be administered by the Forest Service. Big tree groves and coast redwood groves are examples of this.

9) If we concur on the State's need for specific lands within our jurisdictional boundaries, then exchanges which will benefit the management of the National Forests would be more in the public interest than long-term leases.

The key to meeting the problem of the demands of the State and counties for the use of National Forest lands for recreation purpose is first in having a planned Forest Service development program for the area and second, in a continued willingness to accept finances to develop and operate the area.

2. Additional Policies

1) Waterfront Property

Inasmuch as public access to waterfront property is one of the most valuable of public assets and in many areas is limited by private ownership we suggest the following for policy consideration for this region at least.

Policy

In exchange programs no waterfront (lakeshore or river-front) property usable for recreation or providing access will be transferred to private ownership unless an equivalent area of waterfront or an equivalent opportunity is returned to public ownership. In addition, rights of way for public access will be reserved to and along the waterfront on all selected land transferred to private ownership, at least by trail if not by road, where it is in the public interest to do so.

2) Use Capacity and Control

According to use projections, long before the year 2000 we must limit camping to developed sites and prohibit it elsewhere in all but a few areas, and possibly in some wilderness areas. We are doing this now in Southern California as a fire precaution. Sanitation and other impact considerations will eventually be equally as important as fire. This will mean an end to the "open-arms" policy (FSM 2330.1). In recreation management as in other resources uses we will have to confine use to approved areas and carrying capacities. The California State Parks are already operating under this policy.

3) Trailer Camping

Wherever it is possible to develop and provide house trailer camps through concessionaires under special use permit, we should exclude mobile homes from forest campgrounds in the general vicinity. This probably will not be possible or equitable until surrounding Forest Service campgrounds are on a "charge" basis. It would not be equitable to force house trailers into commercial camps while tent campers are provided free accommodations.

3. Other Policy Considerations

1) Transportation Plans and Road Programs

With the considerable mileage of roads and highways that are being constructed on the National Forests each year, constant vigilance and coordination with respect to recreation values is required in route selection, detailed location and construction. In the forest development road program, coordination is accomplished by functional division review in route selection and, in most cases, detailed location with respect to recreational areas and sites. Some tightening up is needed on the part of forest administrators to see that detailed location is such that potential development sites are better served and preserved. Better follow-up is needed during construction to see that recreation sites are, in fact, protected.

Highway construction programs present a more serious problem with respect to serving recreation sites. Often highway engineers make route surveys and prepare

detailed design for highways without adequate preview by the Forest Service as regards the effect on potential recreation sites and values. In some cases sites have been destroyed or their use seriously impaired because plans have progressed too far tomake adjustments, yet sites along such highways are often scarce and precious.

It is essential, therefore, that on all highway projects and major roads, "P" line surveys be more carefully reviewed by recreation staff or the Division of Recreation before final survey and design and procurement of rights of way over adjacent private lands.

We suggest a policy to the effect that all forest development road routes and "P" line locations for state highways in the National Forest be reviewed by the Division of Recreation prior to final design so that adjustments can be negotiated to preserve forest recreation values. During construction of forest roads and highways unit managers should inspect the projects periodically with respect to recreation values and take appropriate action for their protection.

2) Recreation Zones

This Region concurs in the current policies with respect to the treatment and management of recreation zones with the additional wording suggested for FSM 2302, item 10, previously mentioned.

3) Wildlife Habitat

The opportunities for wildlife habitat development or modification were not studied in the NFRS. This is a highly specialized matter. Hunting and fishing areas in the study were considered as they exist today. Wildlife habitat development will be analyzed in the preparation of habitat development plans.

4) Treatment of Potential Recreation Sites

This subject is to be studied during the first planning period to follow the NFRS and was not studied specifically in the inventory except where sites were needed and afforestation was necessary to make them suitable.

5) Kinds of Recreation To Be Developed

The Region concurs in the kinds of recreation to be developed or permitted on the National Forests.

6) Type and Quality of Facilities

The Region concurs in the established standards for facilities and services. Present policy guides should be continued.

In the matter of the use of campgrounds by house trailers, it is felt that the general policy should be one of non-segregation; first come first served, limiting each camp unit to one party, be it trailer, house, camper, or tent camper, provided the trailer and car can be parked in the space provided without interfering with traffic. The exception to this policy would be in the case previously discussed where private developments are installed for trailer use and a charge is imposed for camper use in nearby National Forest camps.

In the matter of interpretive services, it is felt that this is mostly a multiple use (all-function) service and should be so financed. Recreation should finance only its share. We recommend an expanded program of self-service type interpretive installations in preference to but not to the exclusion of the guide or lecture type of interpretive service. In many areas, current lecture and picture programs by local forest officers should be continued. Group fire circles or amphitheatres are justified in the larger recreation communities and in exceptional cases, guided tours are justified.

In the matter of avalanche control, the Forest Service should continue its study program and further perfect techniques. However, carrying out avalanche control in conjunction with permitted winter sports concessions should be the permittee's responsibility, and should be paid for by him if the task is performed by the Forest Service.

7) Financing Recreation Development

This matter has been touched upon under our discussion of policies governing cooperation with other agencies. The magnitude of the program required to meet the goals or projections of 1976 and 2000 are, to say the least, tremendous.

We should continue to negotiate with water development agencies to include recreation development in project programs and costs, and thus be financed by the development agency.

In our earlier discussion of policy we have recommended accepting and possibly seeking finances from city and county jurisdictions for the development of facilities for local use. Any finances gained in this respect are all to the good. However, it would not be wise to press this point except on a project by project basis.

By the establishment of a universal Forest Service charge system private enterprise might be encouraged to develop camp and picnic areas on private lands or to expand concessionaire camps and picnic areas on National Forest land. However, charges for areas developed by the Forest Service would have to be high enough to offset pricing as a factor in consumer preference. There have been no surveys that would indicate conclusively what the public reaction would be to a "charge" policy. However, it is the opinion of many that the public is willing to pay for facilities provided.

Charging for the use of improved areas by public agencies, other than the Forest Service, in California is almost universal. It is reasonable to assume that if we are to obtain the appropriations needed to activate the program indicated in this study, a charge system must be initiated so that the user pays at least part of the costs.

We recommend, therefore, continued study of the means and methods of charging and the early institution of a universal charge system for use of recreation facilities on the national forests.

8) Acquisition

Under section B "Additional Policies", above, we have suggested an acquisition policy for waterfront property.

We suggest that forest recreation plans which are to be prepared following this study, contain a section on acquisition. Priorities should be listed in the plan and provision made for review and revision in the program study for advanced treatment of sites. The recreation priority list should become part of the Forest Acquisition Plan.

9) Recreation Planning

The Region concurs in the decision to establish the forest as the basic long-range planning unit.

10) Recreation Management

We have no suggestions on policy regarding recreation management except as discussed in other parts of this report.

B. Program Recommendations

The program required to meet the projected needs of the years 1976 and 2000 is considerably greater than any program in recreation contemplated heretofore.

The National Forest Recreation Survey indicates that we must develop some 46,938 acres of recreation occupancy sites by the year 1976 and 126,738 acres by the year 2000 in addition to what we now have, if we are to approach meeting the demands of these years.

These acreage figures do not meet the whole demand because they include only the area suitable and available for recreation use. They fall short of meeting demands to the extent of deficits in suitable area in some locations, particularly in Southern California. The location and amount of deficits are shown in appendix pages 1 to 9.

The extent of this program is shown on the following table.

Development site program to meet projected requirements

Class of Use	Developed 1960	Additional Development needed by 1976	Additional Development needed by 2000	Total Goal for 1976	Total Goal for 2000
	Acres	Acres	Acres	Acres	Acres
Campground	5,058	26,921	73,147	31,979	78,205
Picnic Site	532	3,350	7,260	3,882	7,792
Organ. Site	3,063	7,035	21,905	10,098	24,968
Commercial	925	2,738	7,417	3,663	8,342
Rec. Resid.	5,265	2,530	6,317	7,795	11,582
Swimming	84	432	682	516	766
Boating	94	193	449	287	543
*Winter Sp.	6,650	3,739	9,561	10,389	16,211
Total	21,671	46,938	126,738	68,609	148,409

* Includes snowplay areas.

DEVELOPMENT, ADMINISTRATIVE AND OPERATION COSTS
DEVELOPMENT SITES
Estimated 1960 Costs Per Acre - Dollars

	INVESTMENT		OPERATION				
Class of Use	(1) Construction by Gov't.	(2) Prospectus Permit & Plan	(3) Mainten. & Replac.	(4) Care & Sanit.	(5) Admin.	(6) Total Cost Oper.	Remarks
Campground	$3800-$4800	140 *	155	247	40	442	(Includes int. rds., (develop. Acres only.)
Picnic Site	3070	140 *	110	205	32	347	
Organization	-	84	-	-	6	6	
Commercial Site	-	66	-	-	6	6	
Rec. Residence	-	44	-	-	30	30	
Boat Site (Gov't.)	2770		116	110	23	249	
Boat Site (Priv.)	-	110	-	-	6	6	
Swim Site (Gov't.)	2200	-	77	534	61	672	(Lifeguard not included).
Swim Site (Priv.)	-	110	-	-	6	6	
Winter Sports (Play)	3920	-	38	240	28	306	
Winter Sports (Ski)	-	66 base area 2 ski area	-	-	6	6	$250 minimum investment per site.

* Cost of permit issuance if site is to be operated under special use permit. In these cases maintenance and sanitation costs are not included in the estimates. Administration is estimated at $6 per acre in such cases.

Remarks: Campground costs include interior roads only. Other access roads or bridges must be added to this. Costs for a charge program not included; estimates based on development acres; costs of interpretive program not included. Construction costs must be increased if flush toilets are planned.

This program would exceed the planned Operation Outdoors program for camp and picnic areas for comparable years by about four times not including the backlog of rehabilitation required to bring developed areas up to standard. In the development of additional facilities (new construction) to meet growing needs, it probably exceeds performance in the Operation Outdoors program for comparable years by over 14 times.

The area requirements for development sites listed were converted into dollars using regional per acre cost factors developed from engineering estimates and experience. These are listed on appendix page 21.

The figures are based on 1960 dollars. Rehabilitation costs are not shown. Construction costs are not indicated for those classes of development which we anticipate will be borne entirely by private enterprise. Some developments will be borne partly by concessionaires and partly by the Forest Service. This includes such development as for boating and swimming. It is anticipated all of ski area development will be borne by concessionaires and all of snow play area by the government.

Where concessionaire development is anticipated a figure has been included as an investment to cover costs of plan and prospectus preparation by the Forest Service.

The compilation of development and operating cost is based on an accelerating program designed to catch up with demands by the year 1976 and on a constant year by year development program from 1976 to 2000 designed to keep pace with increasing use.

As of 1960 existing installations fall short of meeting demands for camp and picnic grounds by about 50%. The development program anticipates a gradual acceleration beginning in 1961 (FY 1962) to a maximum rate of expenditure for construction by the year 1976. At this point, theoretically, facilities will be adequate to serve the expected use.

Operating costs are increased annually throughout the program at the rate facilities and use are expected to increase.

Since the projected program does not include rehabilitation, it is necessary to increase the initial phases, 1961-1965, by a total of approximately $7,200,000. Spread over a five year period this would add some $1,440,000 per year.

The following table lists costs for development and operation to the key years 1976 and 2000. The figures listed under the year 2000 indicate the annual construction cost from 1976 to 2000 and the operation cost by the year 2000.

Development and Operating Costs
to Meet Projected Requirements

Class of Use	Annual Costs Thousands of Dollars 1961 Develop.	Oper.	1976 Develop	Oper.	2000 Develop	Oper.
Campground	3,454	2,236	9,590	14,235	7,380	34,567
Picnic Site	500	185	954	1,347	500	2,704
Organ, Site	37	18	37	61	52	150
Commercial	12	6	12	22	12	50
Rec. Resid.	7	158	7	234	6	347
*Swimming	34	28	34	174	13	259
*Boating	12	12	12	36	14	71
**Winter Sports	685	46	685	1,925	652	3,015
TOTAL	4,741	2,689	11,331	18,034	8,629	41,163

* Costs based on 50% government construction and operation and 50% constructed and operated under special use permit.

** Winter sports includes snowplay. Development is geared to having 60% of winter sports development in snowplay areas by 1976 and thereafter.

This program would indicate that the construction program beginning in FY 1962 would need to be about $4,700,000 and would have to be increased by over $400,000 each year thereafter to a maximum annual expenditure rate of $11,331,000 in 1976 (FY 1977). Theoretically, at this point facilities would be sufficient to meet the demand. Thereafter, a development program of $8,629,000 would be needed each year until 2000 to keep up with the expanding need.

For operation of the recreation plant, i.e., supervision, maintenance, sanitation, cleanup and overhead the FY 1962 program would require $2,689,000. This requirement would need to be increased each year to the extent that facilities and use increase. By 1976 the operating costs would amount to more than $18,000,000 per year and by the year 2000 annual operating costs would rise to over $41,000,000 per year.

These figures, based on 1960 operating cost estimates, do not allow for an efficiency factor which should develop in projects as large as this. Operating costs may be reduced by as much as 15% by the year 1976 through reduction of unit costs through efficiency, organization and operating procedure. Construction or development costs could be reduced as much as 15% on an expanded construction program using mass production methods.

Campgrounds

This program is based on the assumption that all campgrounds will be constructed and operated by the Forest Service with appro-

priated funds. The estimates do not include costs or returns from operating a charge system nor are they adjusted to reflect "concessionaire types of operation".

The extent of possible contributions to the development program by the construction of facilities or financing by water development agencies is not known. This could affect the Forest Service appropriation needs for the Region as much as 10%.

Similarly the operating costs do not reflect the possible contribution by cities or counties.

Picnic Sites

The picnic area development program. kike that of campgrounds, is based on Forest Service development and operation. It is not adjusted for possible contribution by water development agencies, cities or counties.

Organization Sites

Development and operating costs for this class of use is based on permittee development. Government costs therefor are for planning and permit preparation as a development cost and administration as an operating cost.

This use is not conceived to include group camping in government developed areas since that type of use is included into the campground program.

Commercial Sites

Costs for commercial sites is based on the same premises as that for organization sites.

Recreation Residences

The development costs for recreation residences includes the survey and layout planning for new residence areas. It does not include the costs of adjustments involved in changing residence area uses to some other form. Operation costs are limited to that for administration of the uses.

Swimming Sites

In developing costs for swimming site development it was assumed that 1/2 would be by concessionaires under permit, perhaps in conjunction with other commercial ventures at or near the waterfront, and 1/2 by the Forest Service. In the former case only planning and administrative costs were included. In the latter complete development and operation costs were listed.

Boating Sites

As with swimming sites it is assumed that 1/2 of the development would be by the Forest Service and 1/2 by concessionaires under permit. Like swimming sites, costs were calculated accordingly. However, it may be that in the future 80% or 90% development could be by concessionaires since the use lends itself to commercial development, especially on the larger water areas.

Winter Sports Sites

In developing costs for this use, it was assumed that all ski development would be accomplished through concessionaires and all snow-play area development by the Forest Service. Costs were calculated for development and operation accordingly. By 1976 it is assumed that 60% of the development program would be in the snowplay category with all operation and development costs being borne by the government. It is recognized that in the future, some snowplay development may be accomplished through concessionaires, perhaps as much as 30%. We have no way of knowing at this time.

Dispersed Area Development

The foregoing development and cost program for occupancy type uses does not include costs for establishing, developing or operating classified areas such as wilderness and similar types.

In preparing recreation plans, it will be necessary to set up a timetable or schedule to classify such areas. For wilderness type areas, the timetable should be paced at as rapid a rate as detailed analysis can be completed and administrative decisions made, allowing time for public hearings and other procedures necessary to classification.

Potential wilderness type areas were inventoried in the NFRS, if they appeared suitable, regardless of overall land use plans or objectives. Later these areas were appraised as to their availability for dedication to wilderness use. The decision as to "availability of each unit at this time is a tentative one. If Forest Service policy FSM 2321.1 were to be followed literally all suitable areas could be considered available," since demand projections indicate they will be needed. However, availability of each area needs further study in accordance with FSM 2302, item 11. The first step in programming is to set up a timetable for this study. This may be done in the preparation of forest recreation plans. Therefore all dispersed areas listed in the inventory as "available" must be considered only tentatively available subject to confirmation by further study.

In the planning program each of the dispersed type areas, virgin, scenic, etc., should be programmed for study and eventual classification if it is determined that the classification is the best use.

Cost data are not available at this time for dispersed area development and operation. The largest cost factors will be for access or for trail development within such areas.

Wilderness type area administration has been estimated at an annual cost of about 4-1/2 cents per acre, or on a use basis, approximately 13 cents per visitor day. The Regional cost based on 1959 would be about $70,000.

The existing and potential wilderness type areas inventoried as suitable and available will provide for about 1,465,000 visitor days in 1976 and 1,544,000 visitor days sometime before the year 20000, based on converting factors used in this study. Administrative costs for this use would amount to approximately $180,450 per year by 1976 and $200,720 per year shortly thereafter.

Program Cost Summary

Summary of Annual Costs

Expense Item	Year		
	1961	1976	2000
	Thousands of Dollars		
*Recreation Site Develop.	3,556	8,498	6,497
*Recreation Site Admin.	2,017	13,525	30,922
Rehabilitation	1,440	-	-
Wilderness Admin.	70	181	201
Total Annual Cost	7,083	22,204	37,620

*Reduced 25% for efficiency factor and contribution of other agencies.

Other Resource Considerations

Planning in the NFRS has not been carried forward to the point where the impact on and adjustments to other resource programs can be intelligently evaluated. Also, at this time we are not in a position to discuss the matter of priorities of access development by roads or highways. Except in a few instances we assume that the road development program will dictate recreation development priorities rather than the reverse. In the case of the Kern Plateau, for example, access development was instrumental in establishing the priority of the recreation development of the area.

In other cases, water development has created priority considerations for recreation development. In fact, it behooves the Region to anticipate water developments and the associated recreation

development needs well in advance so that programming can be fitted into the proposed forest five year planning periods. The Region has been able to do reasonably well in this matter up to now, but in the future it will take a larger more flexible program, planwise and financially to keep abreast of water development, if we are to avoid "crash" programs. Much will depend upon how much of a contribution water development agencies can make to the recreation development program.

C. Research Recommendations

The following research programs are suggested for initiation or continuation in the field of recreation:

1. Measuring Recreation Use

Continue project now underway at the PSWF&RES in the development of statistical methods for measuring recreation use. Some of the areas which should be investigated here are the following:

a. Test available measurement systems to determine their accuracy, consistency, and cost.

b. Determine what statistical data is needed, in what form it is needed, and to what degree of accuracy, item by item.

c. Devise a sampling system to provide the data needed.

d. Explore the possibility of calibrating ranger districts and forests to the end that samples or indexes based on samples may be applied.

e. Explore the possibility of applying (d) above on a current basis through a centralized compilation system. Explore its possible use in fire risk analysis as well as for recreation and other resource administration.

2. Carrying Capacity Study

Continue research project now under way at the PSWF&RES on the effect of man's use on the vegetation and environment in developed sites. This should include -

a. The changes in vegetation and soil caused by recreation use.

b. The development of carrying capacities estimates for various soil and vegetative types and climates.

c. The possible cultural treatment that may be applied to offset man's impact, including the possibilities of using planting stock to control or offset man's impact on developed sites and the identification of desirable species or strains for planting.

3. Consumer Needs and Preferences

Consumer preference studies are being made by several agencies. A start can be made on Forest Service problems by defining present patterns of preference expressed through the free choice of recreationists, travel patterns, and the like. Further study by specialized personnel will be needed, however, to sample opinion about alternative types of facilities, preferences for various recreation activities, rates of substitution, etc.

a. Study variations in the use of existing facilities to derive design suggestions that will increase the usefulness of facilities, or reduce the investment needed to meet future needs.

b. Study of alternative or substitute recreation activities, such as boating or hunting.

4. Relationship Between Recreation and Other Forest Uses

a. Develop an impact study on the effect of recreation land treatment policies on other resources, particularly timber. This should include a study of how timber yield is affected by various roadside, streamside, and development site treatments. Treatment of scenic areas and wilderness should be considered as part of the impact.

b. Investigate the possible adjustments and cost differences in timber cutting in areas which form the scenic backdrop to scenic outlooks, recreation highways and recreation areas. Evaluate the adjustment that might be made in the shape and size of cutting areas, particularly in the douglas fir and true fir types or others where the degree of cutting seriously impairs the landscape. There may be possibilities here to lay out cut boundaries more nearly in the shape of natural type and soil boundaries or in shapes that are adapted to the natural landscape and topography.

5. Costs and Returns of Recreation

The investment and opportunity costs of developing forest recreation facilities should be explored and defined as an aid to selecting sites for future development. This information will also suggest possible pricing goals. The methods of efficiently collecting charges for the use of various facilities should also be investigated along with the impact of various charge policies on use.

6. Projecting Needs for Recreation Resources

Studies of methods of projecting the trend of present and future use of recreation facilities are needed to guide recreation planning. The procedures developed should show not only the total use, but also should be sensitive to changes in public taste for various forest recreation activities.

7. Off-Road Mechanized Travel

Investigate the damage and other effects of the use of mechanized equipment such as tote-goat, jeeps, motorcycles, etc. on riding and hiking areas, roadless areas etc. Included here should be methods of control, damage prevention, etc.

8. Wilderness Management Study

Investigate the possible management techniques which may be used in directing and controlling the use of wilderness areas. Such studies should include:

a. Investigation of the variation of the intensity of use within each wilderness; what parts are used intensively and what parts lightly, and why.

b. The possible effect of buffer or high use areas around wilderness areas or just inside their boundaries, which will absorb some of the impact on more distant portions.

c. The use of facilities and other means to disperse wilderness use within the area itself.

NOTE: Administrative studies are underway covering some but not all aspects of items 5 and 8. Items 3 and 7 may be handled by administrative studies with the advice and guidance of the Experiment Station.

VIII. SUMMARY

The demand for the development and use of the National Forests of California for recreation will continue at a rapid rate. Statistical projections show that the visitor day impact on the National Forests will increase over 3 times in the next 16 years and almost 9 times by the year 2000. We are very short of development to meet today's need, particularly in camping, picnicking and snowplay. Unless our current program is increased to catch up with present deficiencies and the increasing demand, we will fall behind further. At present almost 50% of the forest recreation use occurs on undeveloped areas. Together with overcrowded camp and picnic areas this creates problems in sanitation and protection. With the exception of significant deficiencies in southern California and local deficiencies along major highways and concentration areas, we have sufficient suitable area of good to excellent quality to meet the demands for occupancy uses up to the year 2000.

Wilderness area use in relation to projected demands presents a real problem. The projected increase in this use parallels that of occupancy uses, while the area suitable and available to meet demand is nowhere near sufficient to provide the quality generally associated with a national forest wilderness experience. Even if we set aside all areas physically suitable, there would not be enough. The demand for other resource development, water, timber and in some areas, accessible recreation opportunities, is such that the dedication of new areas to wilderness type use must be carefully weighed and analyzed before commitment. On the other hand, suitable areas for wilderness must be kept in the " status quo" until such studies are completed and decisions made.

Fishing, hunting, boating and other dispersed uses continue to increase at rapid rates. There are indications of an interplay of trends in these recreation pursuits. Increases in boater use seem to be associated with a decrease in hunter use, but we have no way at this time to gauge or anticipate such changes. We must plan to meet the demands as they develop. The trends do emphasize the need for an expanded program of fish and wildlife habitat development and for intensive management of water areas for all of their recreational values.

The National Forests can supply hunting and fishing opportunity to a great many more people than they do now. True, there will not be the quality of isolation and wilderness that we now enjoy. According to projected demands for hunting, however, we will have apparent deficits on all but five forests by 1976 and on practically all forests by the year 2000. It is essential that the State institute adequate game management and full harvest of the allowable take each year before the year 1976 rolls around.

If the State continues to expand its fish management program as needed to meet demands, by planting catchable fish, there is enough water to provide for the demands to the year 2000, generally. However, it will not be the quality of experience that we now enjoy in many areas in fishing for wild fish.

Winter sports is a constantly growing use and national forest lands have been developed to meet the demand for skiing at an acceptable level even though we recognize some local deficiencies. However on some southern California forests the winter sports activity of snowplay and spectator use is increasing even more rapidly than skiing. On many attractive winter weekends it is a larger than the skiing activity in southern California, yet the need for development has not been met. Use of toboggans, sleds, sliding discs, etc. is generally not permitted on ski hills (they do not get along together), but takes place largely on undeveloped land with no provision for public safety and sanitation. If this class of recreationist is to be provided for and the problems of sanitation resolved, there must be a program of snowplay area development at appropriate sites. It would seem these users should receive the same consideration in being provided facilities as picnickers, even though the period of use per year is short. The snow player and winter sports spectator is, in fact, largely a winter picnicker.

There is evidence that a large part of the visitor population at developed ski areas are not skiers but spectators and snow players in spite of the fact that they are not encouraged to visit ski concessions.

Realistically, it may be necessary to revise our concept that the snow player be provided facilities removed from areas developed for skiing entirely since snow players will congregate at ski areas anyway. In a revised concept many winter sports areas may need to be developed as winter use areas wherein provision is made for all types of users.

The projections for the National Forest Recreation Study are based on certain social and economic assumptions. These are:

1. That this nation will continue to expand in prosperity and gross national product as it has in the past.

2. That there will be no major world conflicts, and the U.S. will be at peace.

3. That there will be increases in

   (a) leisure time (shorter work week, etc.)
   (b) mobility
   (c) spendable income

The program needed to meet the demands as projected must also, therefore, be based on these assumptions and the costs thereof considered in that light.

A program designed to catch up with projected demand by the year 1976 and keep up with demand thereafter will require an annual budget of over $7,000,000 beginning in FY 1962. This must be increased each year thereafter until, by FY 1977, the annual budget will have increased to $22,000,000. At this point demand and developed facilities would be in balance. Between the years FY 1977 and 2000 the annual budget would increase relative to demand and reach a sum of about $37,620,000 by the year 2000. These estimates may be conservative in light of projections since they anticipate at least a 10% contribution by other agencies and increased efficiency to the extent of about 15% less than present day unit costs. Furthermore they are predicated on 1960 dollar values.

In relation to the approximately 2 million dollars which was available for the region's recreation program in FY 1960 the figures are breathtaking. However, with the outlook for a world at peace, disarmament, and a corresponding reduction in federal expenditures for these things - some 40 billion per year as of 1960 - the costs are not beyond realization. The main problem is that they may not and probably will not be realized soon enough. It behooves us therefore to expand our facilities as rapidly as possible with whatever means are available; yet we must do so within the framework of multiple use. In this it is essential that recreation use not only be developed within that framework but also be managed and operated within it. To permit others, particularly other public agencies, to develop and operate recreation on the National Forests entails many risks to the multiple use program and the Forest Service responsibility to all resource use and development. It should be used only on a limited basis. Pressures in some areas will require exceptions to establish policies. In fact, the demands are so great in some areas of the Region, and the loss of suitable areas outside the National Forests to nonrecreation use is so rapid that agencies which look to land already publicly owned to fill their local needs are being short-sighted. In their preoccupation with efforts to obtain "free" National Forest recreation land they can miss out on opportunities to obtain "outside" land which may never again be available.

Comprehensive recreation plans are needed at the earliest possible date based on facts and findings and on the general program outlined here. Such plans must outline the priorities of development by planning periods and must schedule the additional analysis and study necessary to fully integrate recreation with the overall objectives of the National Forests. Provision must be made for revision of long range goals based on research findings and refinement of the statistical data and factors upon which the present long range program is based. If the research and study necessary to this revision can be accomplished as anticipated, such revision should be made at the end of the first five year planning period.

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000
Class of Use Campgrounds

AREA IN ACRES

FOREST	Established 1960	Suitable Available 1976	Suitable Available 2000	Potential To be established by 1976	Potential To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	598			2,269	3,916	(1,769)	(4,395)	
CLEVELAND	178			1,007	2,747			
ELDORADO	161			633	1,811			
INYO	757			3,187	9,117			
KLAMATH	84			67	417			
LASSEN	247			1,753	3,978			
LOS PADRES	568			2,749	8,836		(1,560)	
MENDOCINO	127			1,021	2,759			
MODOC	186			94	374			
PLUMAS	252			438	2,187			
SAN BERNARDINO	363			3,227	6,253		(330)	
SEQUOIA	239			2,383	10,343			
SHASTA-TRINITY	268			1,287	3,644			
SIERRA	471			4,060	9,452			
SIX RIVERS	96			345	1,090			
STANISLAUS	253			1,164	3,264			
TAHOE	210			1,237	2,959			
TOTAL	5,058			26,921	73,147			

Note: Deficits in columns 6 and 7 are indicated by ( ) -- Surplus unless otherwise indicated.

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000

Class of Use Picnic

AREA IN ACRES

FOREST	Established 1960	Suitable Available 1976	Potential Available 2000	To be established by 1976	To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	182			662	1,633	(426)	(1,335)	
CLEVELAND	11			29	89			
ELDORADO	24			637	1,515			
INYO	42			116	318			
KLAMATH	5			5	27			
LASSEN	33			79	225			
LOS PADRES	43			110	356			
MENDOCINO	5			25	80			
MODOC	41			20	59			
PLUMAS	6			19	87			
SAN BERNARDINO	59			693	1,023		(23)	
SEQUOIA	4			216	496			
SHASTA-TRINITY	1			133	317			In addition-1976, convert 15 of ~~campground to picnic~~ & (2000) convert 8 more.
SIERRA	40			488	787	(22)	(592)	
SIX RIVERS	17			4	17			
STANISLAUS	8			72	122			
TAHOE	11			42	109			
TOTAL	532			3,350	7,260			

Note: Deficits in columns 6 and 7 are indicated by ( ) - surplus unless otherwise indicated.

APPENDIX 2

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000
Class of Use Organization Sites

AREA IN ACRES

FOREST	Established 1960	Suitable Potential Available 1976	Suitable Potential Available 2000	To be established by 1976	To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	257			208	388	(618)	(1,428)	
CLEVELAND	47			433	913			
ELDORADO	675			703	2,322			
INYO	242			-	718			
KLAMATH	--			42	210			
LASSEN	54			295	1,333			
LOS PADRES	124			522	1,145	(48)	(156)	
MENDOCINO	14			351	1,071			
MODOC	15			30	435			
PLUMAS	140			340	2,260			
SAN BERNARDINO	505			287	298	(980)	(1,549)	
SEQUOIA	144			1,056	3,576			
SHASTA-TRINITY	54			486	2,028			
SIERRA	247			917	940	(354)	(3,306)	
SIX RIVERS	21			86	409			
STANISLAUS	365			835	2,515			
TAHOE	159			444	1,344			
TOTAL	3,063			7,035	21,905			

Note: Deficits in columns 6 and 7 are indicated by ( ) --Surplus unless otherwise indicated.

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000
Class of Use Com. Pub. Serv.

AREA IN ACRES

FOREST	Established 1960	Suitable Available 1976	Suitable Potential Available 2000	To be established by 1976	To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	57			27	27	(6)	(47)	
CLEVELAND	16			134	284			
ELDORADO	40			69	181	(24)	(195)	
INYO	268			510	907			
KLAMATH	8			44	197			
LASSEN	20			454	1,783			
LOS PADRES	--			80	347		(339)	
MENDOCINO	6			44	244			
MODOC	--			10	40			
PLUMAS	76			59	374			
SAN BERNARDINO	45			--	40	(268)	(342)	
SEQUOIA	9			231	457		(484)	
SHASTA-TRINITY	89			634	1,309			
SIERRA	164			213	249	(226)	(1,135)	
SIX RIVERS	21			14	117		(28)	
STANISLAUS	63			179	689			
TAHOE	43			36	172			
TOTAL	925			2,738	7,417			

Note: Deficits in columns 6 and 7 are indicated by ( ) -- Surplus unless otherwise indicated.

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000

Class of Use Summer Home Sites

AREA IN ACRES

FOREST	Established 1960	Suitable Available 1976	Potential Available 2000	To be established by 1976	To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	671			--	--		(1,453)	
CLEVELAND	337			--	--			
ELDORADO	1,343			209	698		(1,211)	
INYO	183			217	905			
KLAMATH	52			162	262			
LASSEN	198			330	505			
LOS PADRES	152			--	--		(93)	
MENDOCINO	103			--	26			
MODOC	4			47	91			
PLUMAS	85			315	435			
SAN BERNARDINO	806			--	--	(627)	(2,246)	
SEQUOIA	224			8	77			
SHASTA-TRINITY	74			320	766			
SIERRA	348			10	10	(297)	(1,348)	
SIX RIVERS	62			135	298			
STANISLAUS	387			623	1,858			
TAHOE	236			154	386			
TOTAL	5,265			2,530	6,317			

Note: Deficits in columns 6 and 7 are indicated by ( ) -- Surplus unless otherwise indicated.

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000

Class of Use Occupancy Sites 1-5

AREA IN ACRES

FOREST	Established 1960	Suitable Potential: Available 1976	Suitable Potential: Available 2000	To be established by 1976	To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	1,765	3,166	5,964	3,166	5,964	(2,819)	(8,658)	Small S.H. surplus in 1976 41 acres
CLEVELAND	589	4,134	4,164	1,603	4,033	--	--	
ELDORADO	2,243	9,814	9,904	2,251	6,527	(24)	(1,406)	
INYO	1,492	13,656	13,656	4,030	11,965	--	--	Surpluses as well as deficits occur on all forest summaries except the Angeles in area unallocated to site classes 1 to 5. Only deficits are shown here. See statistical section for detail.
KLAMATH	149	21,356	21,581	319	1,112	--	--	
LASSEN	552	10,502	10,502	2,911	7,824	--	--	
LOS PADRES	887	11,089	11,096	3,461	10,684	(48)	(2,148)	
MENDOCINO	255	6,435	7,151	1,441	4,180	--	--	
MODOC	246	1,534	1,534	201	999	--	--	
PLUMAS	559	8,928	8,928	1,171	5,343	--	--	
SAN BERNARDINO	1,778	7,880	7,937	4,207	7,614	(1,875)	(4,632)	
SEQUOIA	620	19,807	21,335	3,894	14,949		(484)	
SHASTA-TRINITY	486	10,388	10,388	2,860	8,064	--	--	
SIERRA	1,270	11,321	11,733	5,688	11,438	(899)	(5,381)	
SIX RIVERS	217	6,962	7,360	584	1,931		(28)	
STANISLAUS	1,076	9,756	10,046	2,873	8,448	--	--	
TAHOE	659	16,994	17,443	1,913	4,970	--	--	
TOTAL	14,843	173,722	180,722	42,573	116,045	(5,665)	(22,737)	

Note: Deficits in columns 6 and 7 are indicated by ( )

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000
Class of Use Swimming Sites

AREA IN ACRES

FOREST	Established 1960	Suitable Available 1976	Potential Available 2000	To be established by 1976	To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	5	6	17	6	17	1	2	
CLEVELAND	-	1	1	0	1	1		
ELDORADO	50	220	251	62	143	157	87	
INYO	5	11	11	11	11		(8)	
KLAMATH	-	77	77	1	16	76	61	
LASSEN	4	178	178	31	62	121	63	
LOS PADRES	6	7	7	1	6	(5)	(10)	
MENDOCINO	-	9	16	9	16	(3)	(40)	
MODOC	1	5	5	2	2	3	3	
PLUMAS	-	153	153	30	60	123	93	
SAN BERNARDINO	3	16	16	15	15	(3)	(23)	
SEQUOIA	1	31	32	25	32	6	(19)	
SHASTA-TRINITY	-	227	227	187	198	37	(145)	
SIERRA	4	36	38	16	26	17	(3)	
SIX RIVERS	-	108	110	12	30	96	80	
STANISLAUS	5	29	34	4	7	28	27	
TAHOE	-	218	236	20	40	198	196	
TOTAL	84	1,332	1,409	432	682	853	364	

Note: Deficits in columns 6 and 7 are indicated by ( )

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000
Class of Use Boating Sites

AREA IN ACRES

FOREST	Established 1960	Suitable Available 1976	Suitable Available 2000	Potential To be established by 1976	Potential To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	2	4	19	4	19	5	20	
CLEVELAND	-	-	-	-	-	-	-	
ELDORADO	-	215	227	17	45	198	175	
INYO	11	9	9	-	-	19	18	
KLAMATH	-	15	15	2	15	13	(8)	
LASSEN	21	370	370	42	106	327	262	
LOS PADRES	-	20	61	1	2	19	59	
MENDOCINO	-	5	12	3	12	2	(14)	
MODOC	-	6	6	4	4	2	2	
PLUMAS	-	40	40	6	18	34	22	
SAN BERNARDINO	-	-	-	-	-	(6)	(18)	
SEQUOIA	-	52	52	2	5	50	47	
SHASTA-TRINITY	53	230	230	90	108	140	122	
SIERRA	6	21	27	8	12	9	(5)	
SIX RIVERS	-	77	81	6	35	71	46	
STANISLAUS	1	27	36	4	22	23	14	
TAHOE	-	291	315	4	46	287	269	
TOTAL	94	1,382	1,500	193	449	1,193	1,011	

Note: Deficits in columns 6 and 7 are indicated by ( )

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000
Class of Use Winter Sports

AREA IN ACRES

FOREST	Established 1960	Suitable Available 1976	Suitable Available 2000	Potential To be established by 1976	Potential To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	852	464	927	464	927	(302)	(515)	
CLEVELAND	-	80	80	-	25	80	55	
ELDORADO	225	7,138	7,138	228	1,276	6,910	5,862	
INYO	2,480	5,904	5,904	-	-	7,064	6,239	
KLAMATH	-	1,540	1,540	75	150	1,465	1,390	
LASSEN	68	1,537	1,537	19	84	1,528	1,452	
LOS PADRES	70	1,126	1,216	215	471	911	745	Reduction in established
MENDOCINO	-	609	609	237	540	372	69	
MODOC	22	102	102	24	91	78	11	
PLUMAS	40	815	815	35	160	780	655	
SAN BERNARDINO	1,181	2,846	2,846	1,089	2,077	1,747	769	
SEQUOIA	17	5,855	5,855	483	1,083	5,372	4,772	
SHASTA-TRINITY	138	2,347	2,347	270	882	2,077	1,465	
SIERRA	155	314	314	152	314	78	(591)	
SIX RIVERS	1	78	198	6	32	72	166	Reduction in established
STANISLAUS	165	1,928	1,928	442	1,185	1,485	743	
TAHOE	1,236	3,970	3,970	-	264	4,643	3,706	
TOTAL	6,650	36,653	37,326	3,739	9,561	34,360	26,993	

Note: Deficits in columns 6 and 7 are indicated by ( )

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000
Class of Use Observation Sites

AREA IN ACRES

FOREST	Established 1960	Suitable Available 1976	Suitable Available 2000	Potential To be established by 1976	Potential To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	-	38	48	38	48			
CLEVELAND	1	25	25	17	25			
ELDORADO	-	5	5	5	5			
INYO	1	70	70	70	70			
KLAMATH	-	9	9	9	9			
LASSEN	-	64	64	49	49			
LOS PADRES	-	1	1	1	1			
MENDOCINO	-	54	57	55	58			
MODOC								
PLUMAS	3	20	20	20	20			
SAN BERNARDINO	1	27	27	27	27			
SEQUOIA	1	-	-	-	-			
SHASTA-TRINITY	-	30	30	28	30			
SIERRA	1	9	11	9	11			
SIX RIVERS	-	2	2	2	2			
STANISLAUS	2	10	10	10	10			
TAHOE	2	8	8	-	-			
TOTAL	13	372	387	340	365			

Note: Deficits in columns 6 and 7 are indicated by ( )

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000

Purpose of Use Wilderness Type

AREA IN ACRES

FOREST	Established: 1960	Suitable Available: 1976	Suitable Available: 2000	Potential: To be established by 1976	Potential: To be established by 2000	Surplus or Deficit: 1976	Surplus or Deficit: 2000	Remarks
ANGELES	35,270	17,840	17,840	-	4,730	15,270	13,110	Balance w/deficit on San Bernardino
CLEVELAND	25,604	-	-	-	-	9,390	9,390	Reduce established to 9,390 by 1976.
ELDORADO	41,380	46,960	46,960	46,960	46,960	(16,280)	(121,780)	Reduce present acreage to 41,260.
INYO	319,880	191,680	191,680	184,000	184,000	(328,440)	(1,730,940)	
KLAMATH	234,430	-	-	-	-	129,430	(553,070)	
LASSEN	34,720	5,590	5,590	5,590	5,590	(30,190)	(148,690)	
LOS PADRES	122,504	15,480	15,480	-	15,480	42,504	(52,176)	
MENDOCINO	72,717	-	-	-	-	45,717	(17,283)	
MODOC	69,722	-	-	-	-	62,222	13,472	
PLUMAS	-	17,600	17,600	-	-	17,600	17,600	Balance w/deficit on Mendocino
SAN BERNARDINO	64,598	14,240	14,240	14,240	14,240	(241,162)	(417,162)	
SEQUOIA	13,200	74,620	74,620	61,800	74,620	12,820	(400,180)	
SHASTA-TRINITY	230,694	34,240	34,240	-	34,240	40,251	(255,509)	
SIERRA	250,800	128,900	128,900	128,900	128,900	(78,800)	(1,433,300)	
SIX RIVERS	-	9,500	9,500	-	-	9,500	9,500	
STANISLAUS	95,106	61,440	61,440	19,394	61,440	42,046	(445,454)	
TAHOE								
TOTAL	1,610,625	618,090	618,090	460,884	570,200	(286,122)	(5,512,472)	

Note: Deficits in columns 6 and 7 are indicated by ( )

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000

Purpose of Use Unusual Interest

AREA IN ACRES

FOREST	Established: 1960	Suitable Available: 1976	Suitable Available: 2000	Potential: To be established by 1976	Potential: To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	--	8,568	9,058	8,568	9,058	-	-	
CLEVELAND	--	375	375	185	370	190	5	
ELDORADO	280	11,916	11,916	11,129	11,636	787	280	
INYO	33,285	23,627	23,627	--	--	54,024	47,728	
KLAMATH	-	14,203	14,203	7,500	14,000	6,703	203	
LASSEN	74	24,891	24,891	6,386	20,303	18,505	4,588	
LOS PADRES	2	8,467	8,467	4,000	7,540	4,467	927	
MENDOCINO								
MODOC	8,552	4,800	4,800	4,800	4,800	--	--	
PLUMAS	2,286	5,750	5,750	2,844	5,409	2,906	341	
SAN BERNARDINO	6,730	19,652	19,652	12,930	12,922	6,722	6,730	
SEQUOIA	352	6,125	6,125	168	2,208	5,957	3,917	
SHASTA-TRINITY	2,185	10,850	10,850	9,629	10,609	1,221	241	
SIERRA	--	8,837	8,837	8,837	8,837	--	--	
SIX RIVERS	--	5	5	--	--	5	5	
STANISLAUS	380	268	268	100	268	168	-	
TAHOE	--	1,632	1,631	800	1,600	832	31	
TOTAL	54,126	149,966	150,455	77,876	109,560	102,487	64,996	

Note: Deficits in columns 6 and 7 are indicated by ( )

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS

1976 and 2000

Purpose of Use Zones

AREA IN ACRES

FOREST	Established 1960	Suitable Available 1976	Potential Available 2000	To be established by 1976	To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	937	16,335	18,614	16,335	18,614			
CLEVELAND	520	11,419	11,419	9,300	10,702			
ELDORADO	1,358	26,573	26,703	17,425	21,216			
INYO	1,115	41,295	41,295	29,145	39,304			
KLAMATH	124	20,968	21,078	17,370	17,699			
LASSEN	1,191	26,174	26,174	19,896	23,217			
LOS PADRES	2,072	25,358	26,329	17,358	26,215			
MENDOCINO	1,417	11,198	11,841	5,846	8,830			
MODOC	177	30,429	30,429	29,221	29,921			
PLUMAS	327	55,676	55,676	48,030	51,835			
SAN BERNARDINO	2,516	17,420	17,849	15,531	17,601			
SEQUOIA	313	54,855	56,115	42,259	51,054			
SHASTA-TRINITY	253	60,516	60,516	55,818	58,231			
SIERRA	1,160	13,551	13,943	48,646	50,590			
SIX RIVERS	382	36,831	37,066	30,331	31,671			
STANISLAUS	1,457	21,409	21,580	16,028	20,649			
TAHOE	1,006	25,142	25,721	13,145	16,017			
TOTAL	16,325	539,634	546,838	431,684	493,366			

Note: Deficits in columns 6 and 7 are indicated by ( )

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000

Purpose of Use Big Game Hunting

AREA IN ACRES

FOREST	Established: 1960	Suitable Available: 1976	Suitable Potential: Available 2000	To be established by 1976	To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	192,400	-	148,800	-	148,800			
CLEVELAND	204,450	170,343	168,043	-	20			
ELDORADO	602,499	20,820	20,720	13,545	20,720			
INYO	1,226,660	-	-	-	-			
KLAMATH	1,583,400	-	-	-	-			
LASSEN	1,031,620	63,720	77,720	63,720	77,720			
LOS PADRES	929,592	701,080	701,080	311,550	701,080			
MENDOCINO	834,430	33,170	33,170	33,170	33,170			
MODOC	1,619,772	33,000	69,000	33,000	69,000			
PLUMAS	1,064,840	83,160	83,160	83,160	83,160			
SAN BERNARDINO	395,490	83,460	83,460	38,610	83,460			
SEQUOIA	1,106,798	-	-	-	-			
SHASTA-TRINITY	1,912,716	-	-	-	-			
SIERRA	1,171,810	-	-	-	-			
SIX RIVERS	946,763	-	-	-	-			
STANISLAUS	839,910	39,290	39,290	39,290	39,290			
TAHOE	666,825	-	-	-	-			
TOTAL	16,329,975	1,228,043	1,424,443	616,045	1,256,420			

Note: Deficits in columns 6 and 7 are indicated by ( )

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS

1976 and 2000

Purpose of Use Hunting

AREA IN ACRES

FOREST	Established 1960 *	Suitable Available 1976	Potential Available 2000	To be established by 1976	To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	245,400	-	176,600	-	176,600	(294,600)	(298,000)	
CLEVELAND	408,900	340,686	336,086	-	-	507,186	336,046	
ELDORADO	755,499	24,520	24,420	151	24,420	24,769	(190,381)	
INYO	1,520,240	-	-	-	-	(3,453,260)	(5,729,760)	
KLAMATH	1,851,175	-	-	-	-	(298,325)	(1,603,825)	
LASSEN	1,149,200	75,220	99,220	75,220	99,220	(7,923,180)	(9,731,580)	
LOS PADRES	1,253,682	791,940	791,940	267,380	791,940	389,062	(1,201,378)	
MENDOCINO	1,026,430	33,170	33,170	33,170	33,170	(892,400)	(1,495,400)	
MODOC	1,963,972	44,100	89,700	44,100	89,700	(1,141,928)	(2,071,328)	
PLUMAS	1,163,240	94,220	94,220	94,220	94,220	(2,535,540)	(3,692,540)	
SAN BERNARDINO	540,350	90,910	90,910	-	49,450	169,460	41,460	
SEQUOIA	1,261,598	-	-	-	-	(943,402)	(1,658,402)	
SHASTA-TRINITY	2,511,216	10,000	10,000	10,000	10,000	(308,984)	(1,243,784)	
SIERRA	1,672,310	-	-	-	-	(1,753,520)	(2,901,230)	
SIX RIVERS	1,269,323	-	-	-	-	484,993	59,594	
STANISLAUS	952,710	41,190	41,190	41,190	41,190	(2,010,200)	(3,070,100)	
TAHOE	750,425	-	-	-	-	(1,059,725)	(1,516,625)	
TOTAL	20,295,670	1,545,956	1,787,456	565,431	1,409,910	(21,039,594)	(35,967,233)	

Note: Deficits in columns 6 and 7 are indicated by ( )

* Resource Acres, Big Game and Small Game

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS

1976 and 2000

Purpose of Use Fishing

AREA IN ACRES

FOREST	Established 1960	Suitable Available 1976	Suitable Available 2000	Potential To be established by 1976	Potential To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	609	--	811	--	511	178	300	
CLEVELAND	95	35	35	--	--	94	60	
ELDORADO	9,132	2,277	2,617	404	1,084	7,756	4,819	
INYO	8,485	2,600	2,600	2,600	2,600	(14,601)	(43,626)	
KLAMATH	4,596	343	343	--	--	4,519	3,784	
LASSEN	15,032	--	--	--	--	11,827	8,619	
LOS PADRES	1,209	3,142	6,966	--	1,093	3,600	5,873	
MENDOCINO	2,207	48	785	--	--	2,192	2,767	
MODOC	6,549	4,510	4,510	--	--	10,701	10,244	
PLUMAS	3,273	3,751	3,751	--	3,153	4,381	598	
SAN BERNARDINO	577	926	926	--	354	947	572	
SEQUOIA	6,382	847	847	--	18	4,309	829	
SHASTA-TRINITY	6,088	1,500	1,500	--	--	4,981	1,524	
SIERRA	17,845	--	2,800	--	--	9,145	8,591	
SIX RIVERS	5,225	330	330	--	--	5,109	4,515	
STANISLAUS	8,287	832	832	--	--	6,869	4,182	
TAHOE	6,008	7,285	9,830	--	--	12,943	15,050	
TOTAL	101,599	28,426	39,483	3,004	8,813	74,950	28,701	

Note: Deficits in columns 6 and 7 are indicated by ( )

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000

Purpose of Use Boating

AREA IN ACRES

FOREST	Established 1960	Suitable Available 1976	Potential Available 2000	To be established by 1976	To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	122	200	971	--	--	310	1,075	
CLEVELAND								
ELDORADO	3,780	3,919	4,259	437	2,105	6,686	4,663	
INYO	--	1,876	1,876	30	60	1,846	1,816	
KLAMATH	2,020	6	6	--	--	1,876	526	
LASSEN	13,870	--	--	--	--	12,247	10,522	
LOS PADRES	--	3,120	6,944	34	87	3,086	6,857	
MENDOCINO	1,426	71	808	--	824	1,272	(16)	
MODOC	5,023	4,200	4,200	--	--	9,193	9,148	
PLUMAS	1,938	3,751	3,751	--	--	5,599	5,089	
SAN BERNARDINO	160	900	900	--	--	1,054	1,042	
SEQUOIA	--	3,760	4,200	48	120	3,712	4,080	
SHASTA-TRINITY	29,500	16,000	16,000	--	--	40,214	39,560	
SIERRA	8,680	3,000	3,110	--	--	10,390	8,946	
SIX RIVERS	2,356	330	330	--	--	2,626	2,026	
STANISLAUS	4,220	1,585	1,585	--	--	5,235	2,955	
TAHOE	2,917	7,285	9,830	--	--	10,112	11,547	
TOTAL	76,012	50,003	58,770	549	3,196	115,458	109,836	

Note: Deficits in columns 6 and 7 are indicated by ( )

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000
Purpose of Use Mountain Climbing

AREA IN ACRES

FOREST	Established 1960	Suitable Available 1976	Suitable Available 2000	Potential To be established by 1976	Potential To be established by 2000	Surplus or Deficit 1976	Surplus or Deficit 2000	Remarks
ANGELES	--	38	38	38	38			
CLEVELAND								
ELDORADO	--	473	473	473	473			
INYO	--	76,800	76,800	76,800	76,800			
KLAMATH								
LASSEN								
LOS PADRES								
MENDOCINO								
MODOC								
PLUMAS								
SAN BERNARDINO	--	865	865	865	865			
SEQUOIA								
SHASTA-TRINITY								
SIERRA	2,975	500	500	--	--			
SIX RIVERS								
STANISLAUS								
TAHOE		60	60	60	60			
TOTAL	2,975	78,736	78,236	78,236	78,236			

Note: Deficits in columns 6 and 7 are indicated by ( )

R-5

ALLOCATION OF RECREATION RESOURCES TO MEET PROJECTED REQUIREMENTS
1976 and 2000

Purpose of Use Hiking and Riding

AREA IN ACRES

FOREST	Established: 1960	Suitable Potential: Available 1976	Available 2000	To be established by 1976	by 2000	Surplus or Deficit: 1976	2000	Remarks
ANGELES		5,804	5,804	2,500	4,020	3,304	1,784	
CLEVELAND		1,224	1,224	500	1,000	724	224	
ELDORADO		35,796	35,796	3,751	11,251	32,045	24,545	
INYO		38,944	38,944	5,000	15,000	33,944	23,944	
KLAMATH		5,400	7,960	750	3,750	4,650	4,210	
LASSEN		1,968	1,968	1,968	1,968	(10,125)	(44,532)	
LOS PADRES		30,280	30,280	2,500	9,720	27,780	20,560	
MENDOCINO		13,600	13,600	4,400	12,500	9,200	1,100	
MODOC		9,340	9,340	551	2,743	8,777	5,965	
PLUMAS		8,350	8,350	1,750	6,250	6,600	2,100	
SAN BERNARDINO		17,060	17,060	1,800	3,100	15,260	13,960	
SEQUOIA		27,400	27,400	7,500	17,500	19,900	9,900	
SHASTA-TRINITY		40,135	40,135	4,000	13,750	36,135	26,385	
SIERRA		28,020	28,020	2,040	4,440	25,980	23,580	
SIX RIVERS		5,120	5,120	65	350	5,055	4,770	
STANISLAUS		10,405	11,245	2,500	7,500	7,905	3,745	
TAHOE		86,498	86,498	6,000	21,750	80,498	64,748	
TOTAL		365,344	368,744	47,575	136,592	307,632	186,988	

Note: Deficits in columns 6 and 7 are indicated by ( )

FOREST SERVICE SAN FRANCISCO 11, CALIFORNIA

1310 (2300)
September 28, 1959

TO : FOREST SUPERVISORS

FROM : ASSISTANT REGIONAL FORESTER

SUBJECT: PLANNING-NFORRR

Under separate cover we are sending you a supply of a supplemental form to be used in the preparation of Table F (Form 9) of the NF-ORRR.

You have inventoried sites of all sizes in all slope classes and often of varying quality. While many of our inventoried sites can be allocated to one use class, such as campground, many are large and varied and should properly be allocated to more than one use class. The supplemental form has been devised to provide a means of summarizing the potential site by the classes of use to which you allocate them.

This process of allocating sites or parts of sites to use classes is planning. It is preliminary to be sure, but it should represent our best judgment of site use at this time.

The allocation to use and completion of Column 5, Table F, should be done by the district ranger or someone familiar with the areas involved. He should be familiar with site requirements of the various uses or be assisted by someone with at least a working knowledge of site requirements.

The instructions explain in general how to segregate sites into quality classes and assign them to use classes. This form is merely an aid to that process. Each site should be examined starting with the best sites first. The area of the site should be divided among the uses or as non use according to your best judgment. When the projected needs in Column 3 are met, the balance of the sites and areas are non use and should be so listed on the form. However before this is done, all sites should be examined for listing in Column 5, Table F, since very often location may be more important to use allocation than quality.

The area listed as non use on the regional form will be summarized on Form 13 as "non-use" or "not available" according to the unit manager's judgment and entered in the appropriate column on Form 7.

Separate cover

/s/ W. S. Davis

NF-ORRR 536 R-5

WORK SHEET FOR PREPARATION TABLE F Column 5

(1) FOREST_____ DISTRICT_____ Year Needed_____

USE CLASS	Camp Ground	Picnic Site	Org. Site	Comm. Serv.	Summer Home	Site Total	Buffer	Non Use
(2) Acres Needed (Col 3, Table F)							XX	
(3) Site No.			ACRES					
Sheet or Unit Total								

INSTRUCTIONS

1. Summarize allocation of site area to use classes separately for the year 2000 and the year 1976. Allocate sites to use class for year 2000 first.

2. Enter from Column 3, Table F, the estimated area needed to meet projected demand for the appropriate year shown at head of form. This is the target for allocation of sites to uses.

3. Segregate sites into quality classes and beginning with highest quality sites allocate area to uses. Continue allocation of sites until projected needs are met.

AGRICULTURE—FOREST SERVICE—SAN FRANCISCO

FOREST SERVICE SAN FRANCISCO 11, CALIFORNIA

3944

R-5 Amendment NF-ORRR WORK PLAN

Definition

ROADSIDE REST:

Areas, usually one acre or less situated along main travelled through roads, suitable for wayside stopping places for through travellers. Such sites may occur within or immediately adjacent to roadside zones, but normally not more than 300 feet from the travelled way. Usually they are too small for ordinary picnic grounds.

3944

R-5 Amendment NF-ORRR Work Plan

ROADSIDE RESTS:

There will be no converting factor for roadside rests. They will be merely inventoried on the development site form for existing or potential, and mapped.

R-5 Amendment NF-ORRR work Plan

ROADSIDE RESTS:

Roadside rests should be inventoried as a separate item only if they are not part of a larger development site such as a camp or picnic area.

The development site form for potential or existing as the case might be will be used and the data entered as in other sites. A notation will be made in the upper right hand corner of the site form denoting it as a roadside rest.

3944

R-5 Amendment NF-ORRR Work Plan

ROADSIDE RESTS:

Roadside rests will be evaluated for quality on the basis of outstanding good or fair for purposes of selection and planning only since no capacity or demand figures are needed or available. Quality will be rated on the basis of the following criteria:

OUTSTANDING:

1. Readily accessible from highway with safe easily constructed approaches.
2. Slope and surface adequate for the use.
3. Adequate cover for shade.
4. A source of water which can be reasonably developed.

GOOD:

Same as for outstanding except that it lacks shade or water but not both.

FAIR:

Same as for outstanding except that it lacks both shade and water.

R-5 Amendment NF-ORRR Work Plan

WINTER SPORTS SITES:

In developing converting factors for winter sports sites, two categories of use will be considered:

Snow Play
Skiing

The forest will make a breakdown of winter sports use into the two classes using such data as is available, and judgment. Area requirements and area available will be considered separately for snow play and skiing in the compilation but will be reported as totals for winter sports in the compilation forms.

FOREST SERVICE SAN FRANCISCO 11, CALIFORNIA

3944

R-5 Amendment NF-ORRR Work Plan

RIDING AND HIKING AREAS:

Riding and hiking area will be considered as areas to be used for this purpose outside of areas reported as suitable for roadless, wild or wilderness use.

Ordinarily a riding and hiking area will be considered as supplemental to a recreation area, or a community, i.e. they should be selected in proximity with such areas, existing or potential.

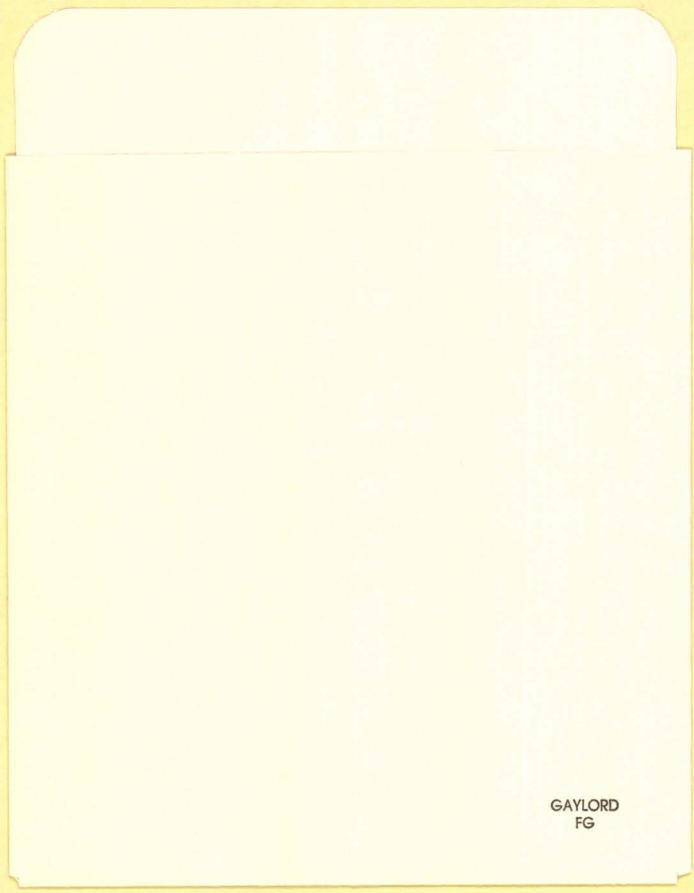
NATIONAL FOREST RECREATION SURVEY

BY: U.S. FOREST SERVICE

DATE	ISSUED TO
GAYLORD 40	

DATE	ISSUED TO

100% Recycled


GAYLORD
FG